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SOME PRACTICAL QUESTIONS IN THE TREATMENT OF PHTHISIS.

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I SUPPOSE that we all feel, or ought to feel, as we grow older, a decreasing desire to discuss questions in which hypothesis is in any considerable degree involved, or which rest chiefly upon personal observation, and an increasing love for such subjects as admit of pure and simple demonstration; but we nevertheless find our professional knowledge so imperfect that, if we must admit only demonstration, we should be unable to discuss the greater part of the subjects which engage our daily attention, much less to add to existing knowledge on those subjects. Hence we must tolerate at least the former class of questions, but with the hope that they will gradually merge into the latter. If, therefore, I wander to-day in any degree from the track into which my own inclinations would lead me, and call your attention to a subject which is yet hypothetical in any of its parts, I must ask your indulgence, in consideration of its great importance and our imperfect knowledge.

I purpose, in the few minutes allotted to me, to glance at two subjects which have, for various reasons, much occupied my own attention, and to which I attach great importance.

I would, in the first place, ask the opinion of the meeting as to its belief in the existence of that early condition of the lungs which precedes the deposition of tubercle, and which some few years ago I designated as the *pretubercular stage of phthisis*. It may be in the recollection of some present that, at the time in question, this view gave rise to some discussion and controversy in the medical journals; and that the kind of reception with which the statement met was that which may also be called the first stage, or that which declares that "what is new is not true". I will now, with your permission, state very briefly the leading arguments on both sides of this important question.

It is allowed that there is a state of system which tends to consumption—one, therefore, in which it is more likely that the person will become consumptive, than that he will not. This has for its manifestation certain signs of general sensibility, debility, or inactivity, defects in assimilation and nutrition, and some unusual signs which refer to the state of the lung. There are also conditions under which persons live which, in like manner, are admitted to lead to consumption; as the relationship to consumptives; the defect of what are understood to be the necessaries of life—food, clothing, and fresh air; unusual drains from the body; and causes, of whatever kind, of exhaustion of the nervous and mental force.

These two sets of circumstances are regarded as holding the position of cause and effect; and we say that, such being the conditions under which men are found, such are the states of system to which they are prone. With these are conditions of the respiratory organs, to which a tacit or expressed assent is also given. The breathing is shallow and feeble; the breath-motion of the chest is short; the vesicular murmur is feeble; the configuration of the chest is flattened; and there is insufficient capability of breathing under the influence of exertion. All these are evidences of lessened mechanical movement of the lungs, in their actions of expansion and contraction; or which, having regard to the spiral arrangement of the air-cells, which I figured in our JOURNAL in 1856, may be termed extension and retraction; and they give high probability of lessened chemical changes proceeding under such conditions. Both of these are, however, rendered certain by the fact that the spirometer indicates a lessened volume of air inhaled at each inspiration; and the carbonic acid apparatus proves that there is a diminished amount of that gas produced in respiration. So far, I think we may state that there is not much difference of opinion. The next step is that which directly connects this with the deposition of tubercle; viz., that with this diminution in the mechanical and chemical action of the lungs, there will be a diminution of their vitality; that with diminution of vitality, there will be a direct proclivity to disease; and hence that the air-cells are thus prepared to become depositors of diseased products.

We need not let the reception of the doctrine rest upon any view which we take of the origin of the tubercle; whether, as Schrœder Van der Kolk, Dr. Addison, and myself, believe it to be the transformed and degenerated epithelium which is normally found in the cells, and which accumulates until the retracted cell, because inactive, is filled by it; or whether we adopt the blood theory, and believe the withdrawn doctrine of Rokitansky, that it is transformed fibrine; or concur with a very recent writer, in the statement that it is broken scales and fragments of all sorts of *débris* of tissue bodily extruded from the vessels into this resting-place; for on any theory alike there will be the same preexistent state of the air-cells, and therefore the same pretubercular stage. Neither does it in any degree oppose the well grounded belief in the constitutional nature of phthisis; for, whilst it does not deny that there may be conditions, as in acute phthisis, perhaps, in which this state of the air-cells may have a more local origin, it expressly admits the constitutional conditions which attend this state, and believes both to be commonly and equally due to a common cause.

Now, I wish it especially to be remarked, that all the foregoing conditions will exist without there being evidence of any kind of the deposition of new matter in the lung; but, even in the cases in which there is undoubted deposition, the same arguments are still applicable. We do not find deposit universal at the same moment; but, on the contrary, it has a small beginning, and extends slowly; so that its progress may usually be well marked. Then, with deposit in one part of the lungs, there will be absence of it in others; that is to say, in those very parts in which it will subsequently be found. We trace these progressive changes month by month, and there is no doubt in any mind on the matter. Now, if in the part of the lungs, or in the whole lung, which is free from deposit, we find marked diminution of the vesicular murmur, do we hesitate to say that there the deposit will, in all probability, occur? and is not our greatest encouragement in cases of partial deposit, that in a whole lung, or in large parts of the lung in which there is deposit, there is good and free vesicular action? Hence, after deposit, you have in the same person, and in the same lung, the pretubercular stage, the stage of deposit, and the stage of destruction, together. I may be wrong; but such facts as these carry to my mind the irresistible conviction both that there is this pretubercular stage, and that it is capable of easy definition and discovery.

The arguments which have been adduced in opposition are two—1. That it is not possible in any case to say that tubercle does not exist; and 2. That no pathological proofs of the existence of this stage have been adduced. The non-possibility of proof has rested upon the facts, that in nearly every body that is opened we find tubercle which had never been detected, and that we cannot prove a negative. It will be at once evident that neither of these afford other than metaphysical objections; for, as the theory of probabilities in mathematics is based upon the fact that even the least uncertain parts of human knowledge are probabilities, but probabilities so high that their value may be demonstrated by a fraction, we have

come to regard things as true if supported by a certain amount of evidence. Now, we allow the existence of tubercle, if there be certain evidences of it; and, with equal truth, we do not admit it without these evidences; so that, in practice, we say that tubercle is or is not there, according as there is or is not the required evidence. As to the statement of the frequency with which isolated specks of tubercle are found, the answer is, that such deposits do not constitute phthisis, and therefore do not affect the question; but, if they do affect the question, they are in favour of it; for, if small deposits of that kind are so frequent, and do not increase, and are true tubercle, they are surely opposed to any theory which assumes that tubercle is essentially and specifically deposited from the blood. The non-detection of these during life is of course no argument, since, in the immense majority of cases, they were never sought for; but, in fact, with the very moderate amount of knowledge which we have as to the nature of tubercle in general, and the special conditions under which these particular deposits exist, there is no such relation between them and phthisis as that the one shall be judged of by the other. Practically, and in reference to phthisis, we can say where tubercle is and is not present. In reference to the absence of pathological proof, I reply, that pathology is but one branch of knowledge; and that the statement is supported by knowledge of at least equal value on physiology, chemistry, and common observation. Pathology is, moreover, a science imperfect enough, and especially imperfect in determining the earliest deviations from health in any organ or condition. If the statement be supported by competent evidence derived from any branch of knowledge, it is entitled to our belief.

In truth, the discussion referred to ended by a practical withdrawal of these speculative objections; and since then the reception of this statement as to the existence of a pretubercular stage in phthisis has advanced to the second stage, viz., the assertion that not only "what is new is not true", but "what is true is not new"; and, in fact, that what I have contended for had long been admitted to exist. With this phase of the question I have nothing further to do. If the theory be true, it matters little by whom and how it was originated; but, starting from this point, my sole desire now is to impress upon the profession its great importance both as to recognition and its treatment.

What, let me ask, is the true state of the case in reference to the effect of treatment after deposit of tubercle? Is not the mortality as large as ever? and, therefore, are our cures more frequent? That the mortality is not lessened, is capable of such proof as I think must be allowed; but, as to the true effect of treatment, we must admit that the absence of long established data denies us the required proof. The direction in which we obtain an answer to the question is simply that of authority or of personal assertion. I have made the assertion that, within certain limits, the disease is more manageable now than formerly; and if so, the patient's comfort and duration of life must have been prolonged. A most eminent physician has hazarded the assertion that the duration of life of consumptives is increased by a definite term; and this, on his authority, has been copied and reasoned upon by medical writers; but it is easy to see how impossible it would be for any observer to have such a number of facts as would give any authority beyond that of the expression of opinion, and one, at most, applicable to the special conditions and classes of cases brought before him. In the absence of data except those of individual experience, I should hesitate to receive that statement as widely applicable; and we have the further objection, that the mortality year by year, as shown by the Registrar-General's Returns, has not shown such a variation as would be implied by the prolongation of the lives of so great a multitude of those who die.

But, without extending this part of our inquiry, it is clear that, however much our treatment of phthisis may have improved, we must acknowledge, and that with increasing force, the importance of directing our attention to its prevention; and this will be done both by determining the external conditions upon which it depends, and the detection of that internal condition which precedes the state in which the disease is, speaking generally, irremoveable. Hence the general admission of the existence of the pretubercular state, and its ready detection, are the first steps to the surest plan of treatment.

In reference to the detection of this stage, I do not think that anything need be added to the description of it already given; but I am desirous that it should be considered apart from mere states of debility—states with which it is now sought to confound it. In mere states of debility, although every function of the body is enfeebled, there is not that especial diminution in the intensity of the vesicular murmur, and in the shortness of the current of air in respiration, which are essential to the pretubercular stage of phthisis. The practical way to regard a case is this. If, on examination of the chest of any person, there is found generally, and in some instances even locally, a clear feebleness of the vesicular sound, and short and feeble inspiratory efforts, not due to any old condition of the lung, but continuing and progressing, that case should be regarded as one going into phthisis; that is to say, one in which tubercle will in all probability occur, and one which is then in the pretubercular stage. I regard this as the best test; for it will be impossible to use the spirometer and the chemical investigation with advantage in this early condition, except in the hands of practised persons. But a continuance of feeble and short breathing, not due to other evident causes, and becoming associated with symptoms referrible to the chest, are matters of easy detection to the experienced observer, and characteristic of the condition.

It is easy to see how beneficial both to the public and to the profession would be the establishment of this fact; first, in the mind of the profession as a body, and then in public belief; for, as some of these symptoms are evident to non-professional persons, if their true importance were acknowledged, such cases would seek advice when in a stage in which the resources of our art are commonly enough to avert any further evil. Nothing, in my belief, would give a greater boon to the profession, as well as to mankind, than the wide recognition of this doctrine.

I would, then, only further remark, that the condition above-mentioned being present, and being recognised as accompanying a state of diminished vitality, it is our duty to apply those measures which are acknowledged to be fitted to increase the general vital activity of the system, and the special vitality of the air-cells of the lung. Into the former I shall not enter, as we have long agreed as to the beneficial influence of exertion, change of scene, food, and other questions of regimen, in that direction; but, whilst enjoining all this, I wish to ask your unbiassed attention to what may be termed the mechanical method, which I have elsewhere inculcated; I mean, to the methods whereby the mechanical action of the lungs may be increased. I know that this is ground upon which we should tread warily, for it adjoins the domain of quackery. Yet, when Lehmann, years ago, suggested the propriety of such treatment in liver-affections, basing his views on physiological reasoning; when Piorry has recently affirmed that by it he has been able to trace the progressive absorption of deposits in the pulmonary texture; when Mühry has shown that in rarified air there is a less tendency to phthisis, and consequently commends the mechanical method of treatment,—I feel no hesitation in saying that it has now authority abundantly sufficient to require us to lay aside objections based upon fears of quackery. It is now some years since I recommended the practice of voluntary expansion of the chest in all conditions in which there was lessened mechanical action of the lungs; and I have been able, by the aid of the spirometer, to prove that in many cases an increased vital capacity has been gained. After much experience in its use, I have found that the difficulty lies in teaching and inducing the patients efficiently to perform it; but that difficulty is materially lessened, if they are so placed that the spirometer may indicate to them the actual quantity of air which they inspire. The patient is first directed to place the trunk in the best posture for inspiration, viz., in the erect posture, with the shoulders and back fixed so that the pectoral muscles may use the shoulders and arms as their fulcra in inspiration, and then to inspire through the open mouth slowly, evenly, and most deeply, to the extent of filling the lungs to their utmost capacity, and with a view to increase that capacity. The quiet repetition of this process during ten minutes twice in the day is probably sufficient. The mode of operation of this process is that of more complete expansion of the air-cells of the lungs; and the benefits derived are, diminished tendency to closure of the air-cells; possibly, the promotion of the absorption of deposits; increased vitality of the structures of the air-cells; freer pulmonary circulation; more complete evolution of the carbonic acid retained in the air-cells; and increased chemical and vital changes in the air-cells, as shown by Vierordt and myself; increased development and power of the inspiratory muscles; and, not the least important, the direction of the attention of the patient to the avoidance of shallow and short inspiration and unnecessarily frequent and irregular respiration.

These are objects which all will readily admit to have the

utmost value; and that they are attainable by the method, has in part been proved by science, and in other part is clear to the most casual observer. It will be observed that, as the air is freely admitted and the air-cells completely distended, this plan is widely different from one already recommended, in which the patient is directed to inhale deeply from an inhaler with a very narrow tube; for in the latter the lungs cannot obtain a volume of air sufficiently large to fill them. It is also widely different from all plans of ordinary medicinal inhalation; for in the latter the patient is seen quietly inhaling, with the apparatus on his knees, and his chest bent forward, and, in fact, inspiring a less volume than he would inspire without it. The full importance of this difference is at once felt when we remember that in health, with an ordinary inspiration, only thirty to forty cubic inches of air enter; whilst with a deep inspiration, without previously taking a complete expiration, the quantity is about five times as great. Hence, as a mechanical agent, ordinary inspiration has much less value. The explanation of the value of high elevations, as preventing phthisis, and already mentioned under the authority of Dr. Mühry, does not lie, as has been so pointedly affirmed by a recent author, in offering air with a reduced volume of oxygen, and thereby lessening the process of oxidation, but in requiring a deeper inspiration; so that, by the inhalation of an increased volume of air, the required weight of oxygen may be obtained; this larger volume, in habitual respiration, having manifestly a tendency to maintain the patency of the air-cells.

I therefore, with great submission and great confidence, ask you to accept this as one of the orthodox methods of treating this class of cases, and to give it a fair trial; bearing in mind the pains which must be taken to insure complete distension of the lungs, and not expecting other results than those for which I have contended. I have found a natural fear of it in the minds of patients who have spat blood; and, whilst one would defer to such a feeling, I am bound to state that that particular result has been exceedingly rare, and is not at all to be looked for in the treatment of the pretubercular stage of phthisis.

It has also the further advantage of not interfering with any other plan of treatment which ought to be pursued at the same time; and it gives greater efficiency to ordinary and gymnastic exercises, in their power of increasing the expansion of the lung.

As the time allotted to the reading of each paper is so short, I will only ask your further attention to one other subject in the treatment of phthisis; viz., *the profuse perspirations*. This is also a practical question, and one of the greatest importance and difficulty. It is one which has come before me a hundred times a week, and which I have endeavoured to investigate as closely as I could; the direction of my investigations being to ascertain how far this tendency to perspire is associated with idiosyncrasy, and is dependent upon certain states of the blood; and, although I have occupied two years in the inquiry, I can only as yet indicate the outlines of the results.

As a matter of common observation, we may admit that profuse perspirations are not peculiar to phthisis, but occur in other states of exhaustion; that, so far as we know, they have no sanitary influence; and that they chiefly occur during sleep, whether by day or night, but of course more usually in the early morning. Their great evil does not lie in the elimination of matters the retention of which is advantageous to the system, but in the exhaustion of the system; and the explanation of the exhaustion is as follows. With profuse perspiration, there is the minimum of resistance to the current of the blood; and, as a consequence, the heart's action becomes feeble, as indicated by the soft, compressible, and tremulous or excited pulse. This interference with the due distribution of the blood to the brain and to the organs of nutrition lessens the action of those organs, and nervous prostration and defective nutrition necessarily follow. Again, with profuse perspiration, there must be the greatest waste of animal heat; for the conversion of fluid into vapour causes the absorption of heat to be increased a thousand times. Hence cold perspirations of this class are common; and, in very advanced phthisis, I have known the reduction of the temperature of the body to be so great that the air expired in the early morning by the sleeping patient has given a cool sensation to my hand. With this abnormal diminution of heat, there will be the known effects of starvation by cold; and its importance in the class of cases under consideration is, that the heat cannot be restored to the normal degree, from the diminished appetite for and power of transforming food. Hence there is undue waste of heat, without the healthy power of renewal. Such are the effects and the attendant circumstances; but the immediate cause is yet unexplained. It is evident that, in cases of debility, there is a constant tendency to defective action of the heart; and, from the same cause, an undue relaxation of all the tissues. In the nighttime, moreover, this diminution of the heart's action is the greatest, and so great that, in my inquiries on phthisis, I found the extreme difference between the night and the day was, on an average of 1,500 observations, 27, and in individual cases 40 pulsations, per minute. Moreover, this diminution continues until the morning; and hence its effects have some hours in which to accumulate before the period when the perspirations are usually the most profuse.

Now, having in view this one evident explanation of their occurrence, has our special treatment for the arrest of night-sweats taken it at all into account? We give astringents, acids, tannin, and oxide of zinc; and direct careful direction to the amount of clothing and the ventilation of the room. Ought we not as well to sustain the action of the heart? With this view, I have found that coffee in the night, or a small quantity of an alcohol, as rum, with a small quantity of food, have very great value; and with it I also enjoin a supper of such kinds of food as lessen the action of the skin, and at the same time sustain the heart; of which milk is the perfect type. In such cases, the like principle may be carried into the ordinary dietary, if the skin be at all times too active; and my recent experiments have proved that coffee, milk, fat, alcohol, beer, and wine, are the articles employed in food which lessen the action of the skin, while tea and vegetable food increase it. It is also evident that early retiring to rest and early rising lessen the chance of night-sweats, as was shown by the progression in the hourly variations of the pulse during the day and night in the inquiry referred to.

But there is a further circumstance to which I wish especially to ask your attention, as a guide to general treatment. We know the general effect of acids and alkalies in restraining or promoting perspiration, and consequently have administered acids exclusively in the cases in question. Now, it is true that there are many cases of profuse perspiration in which it is not relieved by acids, but in which alkalies or neutral salts give immediate relief. Of this I have abundant proof. Hence it is of the first moment to have some method of distinguishing this class of cases. The method which I have employed was adopted with a view to determine the defects in the assimilative functions, and consisted in determining by the odour of the perspiration whether volatile acids are passing off in an unusual quantity; and I find that, in a very large proportion indeed, the perspiration has a sour odour. This is, of course, determined whilst the utmost cleanliness is used; and in some cases it is offensive beyond conception or description; for I have oftentimes, amongst the out-patients at the hospital, been compelled to open the doors and windows, and keep the room empty for some minutes. Now, as the unusual emission of acid will arise either from undue rapidity of injection of an acid, or from deficiency in the blood of alkali, whereby the resolution of the vegetable acid may occur, we are at once led to the propriety of regulating the starchy food and administering an alkali. In doing so, I have sometimes given the carbonates of potass and soda combined, and at others citrates or acetates of potass or ammonia, not unfrequently the ammonio-chloride of iron; and have experienced the best results, viz., a diminution or cessation of the symptoms, an increase in the power of assimilation, and a cessation of the perspiration. When, on the other hand, there is not a sour odour, I believe that alkalies are contraindicated, and acids and arterial stimulants are the most fitting.

Thus there is an indication, easily ascertained, which aids both in the general and the special treatment of the case, and one which I venture to recommend. There is, however, yet much to be done before this part of the question is fully elucidated; for there are cases which do not yield to this treatment, and a few in which, with acid perspiration, mineral acids seem to relieve the perspiration; and with those which obey the rule, I have not as yet been able to specify the exact cases in which the various kinds of neutral salts above mentioned are severally the most beneficial, although it is quite clear to me that, whilst in many cases they may be used indiscriminately, there are others in which one kind is fitted for one case, and another for another. There is, therefore, hope that the combined observations of many observers may add much to our knowledge upon this point; but yet, as a practical guide, I feel confidence in affirming that the state of the perspiration is an important indication, and that sour perspirations are best treated by alkalies or neutral salts.

I cannot but think that the freer discussion of some impor-

tant practical points in phthisis by those who see much of the disease would surely tend to clear up some doubts, and give us truer notions of the malady; and I can only express my regret that the time allotted does not permit me to refer to other points which have occupied my own attention.

A Course of Lectures

ON

URINE, URINARY DEPOSITS, AND CALCULI.

DELIVERED AT THE PATHOLOGICAL LABORATORY, DURING THE SESSION 1857-58.

BY

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LECTURE VIII.

URINE IN DISEASE. 1. SUBSTANCES FLOATING ON THE SURFACE OF THE URINE, OR DIFFUSED THROUGH IT, BUT NOT FORMING A VISIBLE DEPOSIT. *Thin Pellicle formed upon the Surface of Urine. Opalescent Urine. Opalescence produced by Vibriones. Milk in Urine. Chylous Urine. Mr. Cubitt's Case. Analyses of the Urine. Microscopical Characters of the Deposit. Dr. Bence Jones's Case. Dr. Priestley's Case. Of the Treatment of Cases of Chylous Urine.* FATTY MATTER IN URINE. *Different States in which Fatty Matter occurs in Urine. Cholesterine in Urine. Composition of Fatty Matter passed in Cases of Fatty Degeneration of the Kidney. Kiestein.* OTHER FORMS IN WHICH FATTY MATTER OCCURS IN URINE. *Urostealith. Fluid Yellow Fat. Fatty Matter in Rabbits' Urine. Erroneous Observations connected with the Presence of Fatty Matter in Urine.*

Thin Pellicle formed upon the Surface of Urine. Several different substances are found from time to time floating on the surface of urine; but, for the most part, these are merely buoyed up by a thin pellicle, which is probably formed by the action of the air on the urine leading to the decomposition of some of its constituents, which causes the precipitation of the phosphates mixed with organic matter in the form of a thin pellicle. Triple phosphate is also deposited in the pellicle, in a crystalline form, some of the crystals being exceedingly minute, but still exhibiting their well known characters. A similar pellicle may always be formed, if urine be somewhat concentrated by evaporation; but in this case a large quantity of urate of soda is entangled in the pellicle. It crystallises in the form of small spherical masses, from all sides of which little spicula project.

Fatty matter is often found floating upon the surface of urine, especially when it has fallen in accidentally. One form of fatty matter has been described under the name of kiestein, which was said to be constantly present in the urine of pregnant women.

Urates occasionally accumulate upon the surface of urine, but present nothing peculiar for remark.

Opalescent Urine. The turbidity or opalescence of urine is most frequently due to the presence of urates in an exceedingly minute state of division. The precipitate may be so fine and so light that it will not sink to the bottom and leave a clear supernatant fluid. The urine is perfectly clear when passed, but becomes turbid afterwards. Upon the application of a gentle heat, the turbidity is instantly removed. In urine of high specific gravity, many substances are held in suspension which would form a deposit in fluids of ordinary density. It is not uncommon to meet with pus or blood thus diffused through the urine. If mucus be present too in large proportion, many substances which usually form deposits will be buoyed up as it were, and evenly diffused through the fluid, although generally these substances subside more or less.

Opalescence produced by Vibriones. Some specimens of urine become decomposed very soon after they have been passed; others are voided in a state of incipient decomposition. Such specimens are found turbid, and look as if they had been mixed with a very small quantity of milk. Upon microscopical examination, it will be found that this turbidity depends entirely upon multitudes of some of the lowest organisms, consisting of different forms of fungi and other little elongated bodies termed vibriones, which are considered by some authorities to be animals, while others class them with vegetables. My own observations have led me to entertain the latter opinion with regard to their nature.

Milk is often added to urine, for the purpose of deceiving us, and is of course diffused through the fluid, the degree of opalescence varying according to the quantity of milk added. Milk can always be detected upon microscopical examination by the presence of the numerous oil-globules, and by the circumstance of the milky fluid becoming quite clear after agitation with a little ether and a few drops of acetic acid or carbonate of potash, which will dissolve the envelopes of casein around the globules, and thus the oily matter becomes exposed to the solvent action of the ether. By the addition of a little acetic acid, the casein of the milk is precipitated.

Chylous Urine.

The most important substance which gives to urine an opalescent appearance, and at the same time causes it to resemble milk, is fatty matter in a very minute state of division —in a *molecular state*, as it is termed. Such urine, under the microscope, is seen to contain a considerable quantity of the most minute particles, which exhibit molecular movements. These are not altered by a moderate heat, but are dissolved in great measure, though often not entirely, if the urine be agitated with ether. Urine possessing these characters is termed chylous urine. The cases in which it occurs are very interesting, and I propose to call your attention to some points connected with this condition. Cases of chylous urine are very seldom met with in this country, but I have been told by many friends that they are comparatively common in warm climates.

The following interesting case occurred in the practice of my friend Mr. Cubitt of Stroud, to whom I am indebted for the notes, and also for the specimens of urine which I analysed.

Mr. Cubitt's Case. "Mrs. S., aged 50, native of Norfolk, in which county she has always resided, has been married twenty-nine years, and has had five children, the last of whom died in its second year. The youngest now living is 20. The catamenia ceased at 43.

"Till within the last four years, she has usually enjoyed good health, but at that time had a severe attack of influenza. She continued more or less out of health during the six or nine following months, and soon after this period her urine assumed a milky appearance, which character it has retained up to the present time (November 1849), except at intervals of unfrequent occurrence and of short duration. The disorder would seem to have been gradually progressive, as the urine, which was at first only turbid and opalescent, has become by degrees more and more opaque, so that when I saw it, the unassisted eye could not distinguish between it and milk; moreover, after the lapse of a few days, a rich kind of cream rises to the surface. It is almost entirely free from any urinous odour, and has a faint, sweetish smell, something resembling that of ripe apples. In the mean time, the general health has been more and more failing, and the digestive functions imperfectly performed; the patient has complained of loss of appetite, pain at the epigastrium after eating, slight headache with nausea, palpitations, and other dyspeptic symptoms. She has been losing flesh, suffers from pain in the back and loins without tenderness, from aching of the limbs, incapability of exertion, and other evidences of general debility; but still when the duration of the disease is taken into account, the general health may, upon the whole, be said to have suffered little. She states that throughout the affection, fatigue, whether of mind or body, unusual exertion, excitement, late hours, distress, anxiety, immediately renders the milky character of the urine more marked. She has been under the care of several medical men, as well as of some professed quacks (none of whom have ever examined the urine), without benefit; nevertheless, she has found that for the time, brandy and isinglass, or compound spirits of lavender, have never failed to clear the urine, but without at all improving the general health. She seems to derive *temporary relief from all kind of stimulants.* Occasionally, and without any apparent cause, the urine reassumes its ordinary appearance, but this is of rare occurrence, and its duration never exceeds two or three days. At no one time has she passed milky urine *during the day.* It is only the urine passed in the morning, after the night's sleep, which has ever presented a milky character. Occasionally, this urine settles down into a tremulous jelly, which takes the

shape of the containing vessel, and more than once this spontaneous coagulation has taken place within the bladder itself; and in consequence of the impaction of small masses in the urethra, the patient has suffered from temporary retention of urine. She has tried various kinds of diet, but without any visible effect upon the urine. The quantity secreted appears normal, and there is no unusual frequency of micturition. The appetite has never been inordinate, or the thirst unnatural; the bowels are inclined to be costive. There is nothing remarkable about the state of the skin. She has suffered a good deal from pain in the back and loins, but there is no tenderness in this locality, and the uneasiness seems to depend upon exertion, and appears to be connected with general debility. There has never been any dropsy, and she has suffered from no cardiac or pulmonary symptoms, but such as may be accounted for by the dyspepsia; but I have not had an opportunity of examining the chest. She has never had severe headache, vertigo, vomiting, or other cerebral symptoms. Has never had rheumatism, fever, or any inflammatory attack, has not been salivated, and has no reason to suppose she has suffered from exposure to cold. At the time when I saw her, the tongue was slightly furred, pulse 70, small and soft, respiration 20, and the skin cool; but there was a haggard appearance about the countenance, and a dark circle around the eyes, with slight bagging of the skin in this situation."

Mr. Cubitt inquired as to this patient's state in April 1857, and informed me that occasionally she passes chylous urine, but only for a short time. The symptoms seem to have become less marked. She has been taking no medicine, and latterly has been in better general health than for several years past.

Analyses of the Urine. The first specimen of urine was passed in the morning. It was perfectly fluid, and had all the appearance of fresh milk. It had neither a urinous smell nor taste. Upon the addition of an equal volume of ether it became perfectly clear; but when the ether was allowed to evaporate by the application of a gentle heat, the fatty matter could be again diffused, by agitation, through the urine, which regained its milky appearance, although it appeared rather more transparent than before the addition of the ether. Upon examination, however, by the microscope, instead of the minute granules visible in the first instance, numerous large and well defined oil-globules were observed.

Specific gravity, 1013. *Reaction*, neutral.

A little of the urine was evaporated to dryness. The dry residue was very greasy to the touch. It was treated with ether, and upon evaporating the ethereal solution, a considerable quantity of hard and colourless fat was obtained.

Analysis 55.

The urine was found to contain in 1000 parts—

Water	947·4	
Solid matter	52·6	
Urea	7·73	
Albumen	13·00	
Extractive matter with uric acid	11·66	
Fat insoluble in hot and cold alcohol, but soluble in ether	9·20	
Fat insoluble in cold alcohol	2·70	13·9
Fat soluble in cold alcohol	2·00	
Alkaline sulphates and chlorides	1·65	
Phosphates	4·66	

The second specimen was passed during the same day. It was slightly turbid, but contained a mere trace of deposit, consisting of a little epithelium, with a few cells larger than lymph corpuscles, and a few small cells, probably minute fungi. Not the slightest precipitate was produced by the application of heat, or by the addition of nitric acid.

Specific gravity, 1010. *Reaction*, very slightly acid.

Analysis 56.

In 1000 parts it contained—

Water	978·8	
Solid matter	21·2	
Urea	6·95	
Uric acid	15	
Extractive matter	7·31	
Fatty matter	0	
Alkaline sulphates and chlorides	5·34	
Alkaline phosphates	1·45	1·60
Earthy phosphates	·15	

The presence of so large a proportion of fatty matter, perhaps combined with the albumen (13·9 grains), in the first specimen, and its complete absence in the second, which was passed only a few hours afterwards, is very interesting, and bears upon the pathology of this strange condition.

The proportion of the constituents in 100 grains of the solid matter of these two specimes of urine, is given in the following table. 55, is the chylous; 56, the clear specimen:—

	55.	56.
Solid matter	100·00	100·00
Urea	14·69	32·78
Albumen	24·71	—
Extractive matter, uric acid	22·17	35·18
Fatty matter	26·43	—
Alkaline sulphates and chlorides	3·14	25·18
Phosphates	8·86	7·54

Microscopical Characters of the Deposit. The slight deposit which formed after the chylous urine had been allowed to stand for some time in a conical glass vessel, consisted of a small quantity of vesical epithelium, and some small slightly granular circular cells about the size of a blood-corpuscle.

No oil-globules could be detected upon the surface of the urine or amongst the deposit, and the fatty matter, which was equally diffused throughout, was in a molecular or granular

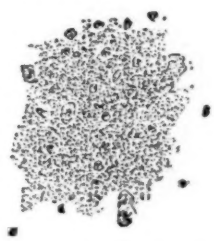

Fig. 23.—Deposit from chylous urine, showing fatty matter in a molecular state. 215 diameters.

form. By examining the urine with the highest powers, only very minute granules could be detected. These exhibited molecular movements. Indeed, it may be said, that the microscopical characters of this urine closely resembled those of chyle.

Only a few of the granular cells could be discovered in the clear specimen, in which there was scarcely any visible deposit.

In a case which occurred in the practice of Mr. Gossett, and which is related by Dr. Golding Bird, an alternation in the character of the urine similar to that noticed in the present case occurred. The urine which was passed in the morning was chylous, while that secreted some hours afterwards was clear, pale, and transparent. The clear specimens, however, contained albumen. The chylous specimen which I examined did not coagulate spontaneously, as often occurs in these cases. In the case reported by Dr. Bence Jones, specimens of urine were frequently passed which were perfectly clear.

L'Heritier, and the late Dr. Franz Simon, of Berlin, state that these specimens of milky looking urine contain oil-globules; but the greater number of authors who have met with such cases have failed to detect oil-globules in the urine. In the present instance they were certainly absent, and the fatty matter existed in a molecular form only.

In Dr. Bence Jones's case, oil-globules were found in one or two instances; but in other specimens the fatty matter was present in a molecular state.

In true cases of chylous urine, the fatty matter, in a molecular state, seems to filter through the walls of the vessels, and escapes at once into the urine, while in cases of fatty degeneration of the kidney, in which actual globules are observed, the fatty matter exists in the interior of the cells, where it remains a sufficient time to become converted into distinct oil-globules. Globules thus formed may afterwards become separated from each other, and may appear in the urine as free oil-globules. It is, however, very probable, that after chylous urine has been allowed to stand for some time, the granular fatty matter may become aggregated in masses, so as to form distinct oil-globules.

Dr. Bence Jones's Case. In a case of albuminous and fatty urine, reported by Dr. Bence Jones (*Medico-Chirurgical Transactions*, vol. xxxiii), oil-globules and streaks of oil were detected upon the surface of the urine which was passed in the

morning, by microscopical examination. In two other specimens passed later in the day, fatty matter in a molecular form, but no oil-globules, was discovered. Upon standing, a coagulum formed in the urine. These specimens contained about 50 grains of solid matter in 1000 of urine. The patient was a Scotchman, aged 32. His work was hard, and he was subject to privations. The urine was first observed to be thick and white about Christmas 1848; and at this time, the chief symptom from which he suffered, was acute pain in the loins.

Lehmann is, as far as I know, the only observer who states that chylous urine never owes its opacity to fat (vol. iii, p. 544). I have now seen several cases, and in all the opacity was due to fatty matter. Authorities generally are quite agreed upon this point; but some state that the fat is sometimes in the form of globules. It may be combined with albumen.

Many of the patients whose cases are recorded, have suffered from severe pain in the region of the kidneys; but this may be accounted for by general debility, associated with this condition of urine, as well as on the supposition of the existence of organic disease of the kidneys. Indeed, the pain referred to in this locality, seems to partake more of the character of muscular pain than of pain seated in the kidneys themselves.

The following are two analyses of the urine in Dr. Bence Jones's case. The first was made on October 19th, and the second was passed some time afterwards, on the same day on which the patient was bled.

Analyses	57	58
Water	955·58	943·13
Solid matter . . .	44·42	56·87
Albumen . . .	14·03	13·95
Urea	13·26	24·06
Fatty matter . .	8·37	7·46
Saline residue . .	8·01	10·80
Loss	·75	·60

The chylous urine contained blood-corpuscles. The serum of the blood was not milky, but the blood contained in 1000 parts 240·03 of solid residue, which contained of fatty matter ·62; fibrine, 2·63; blood-globules, 159·3; solids of serum, 78·1.

Dr. Bence Jones showed, in some valuable experiments on this case, that during complete rest albumen ceases to be passed. (*Phil. Trans.*, 1850.)

The urine was not chylous from February 14th, 1850, to October 4th, 1851, when it was again slightly chylous. The beneficial change was entirely attributable to gallic acid. At first, twenty grains three times a day were given, but this was afterwards diminished.

Dr. Bence Jones mentions another case of a gentleman, aged 40, who passed the greater part of his life in the West Indies. The chylous condition of the urine was increased both by mental and bodily exertion. The urine was sometimes clear for several days together, sometimes white after dinner, and clear all the rest of the day. It was more frequently chylous after animal than after vegetable food.

Dr. Priestley's Case. This occurred in a boy who was only 11 years of age. (*Medical Times and Gazette*, April 18th, 1857.) He was born at the Cape of Good Hope, and was taken as a child to the Isle of France, and while there had frequent attacks of hæmaturia and chylous urine. The attacks came on at intervals of weeks or months. He was placed in the autumn of 1855 under the care of Dr. Simpson of Edinburgh. Various plans of treatment were tried in vain. He was confined to the house, and passed as much as fifty to fifty-five ounces of chylous urine daily. He gradually became weaker, and died apparently from asthenia. A fortnight before death, the urine lost its milky appearance, and the feet became œdematous. Every tissue appeared bloodless, and there was considerable emaciation. The kidneys were pale, rather larger than natural. Throughout the greater part of both kidneys the epithelium was found to contain numerous oil-globules. Dr. Priestley suggests the possibility that this case of chylous urine may have been associated with Bright's disease.

No lesion likely to account for the production of the chylous urine has been met with in the *post mortem* examinations of the cases of this condition which have been made; and most observers consider that the chylous condition of the urine does not depend upon a morbid state of the kidneys. Dr. Elliotson, on the other hand, inclines to the view that the kidneys are to be regarded as the seat of the affection. He gives the history of a very interesting case in the *Medical Times and Gazette* for September 19th, 1857.

[*To be continued.*]

Original Communications.

TEN YEARS OF OPERATIVE SURGERY IN THE PROVINCES.

By AUGUSTIN PRICHARD, Esq., Surgeon, Clifton, Bristol.

I PROPOSE under the above head to lay before the readers of the BRITISH MEDICAL JOURNAL a complete but brief account of ten years of operations. This will include those operations which fell to my share during that period as one of the five surgeons of the Bristol Royal Infirmary, and will therefore represent as nearly as possible one-fifth of the cases occurring there in that time, with the addition of the usual small proportion met with in private practice.

Of the more important operations, every case, whether successful or otherwise, will be noted; but of the minor ones, a few have slipped away for want of accurate notes taken at the time of their occurrence. The whole number of each kind of operation is too small to supply any safe basis for statistical results, supposing that medical and surgical statistics were ever useful; but I think that those of our associates who are employed in a like occupation will feel sufficient interest in this and the following papers, to justify my publishing them; and I am not without hope that they may be even useful; for every surgeon with a moderate amount of practice, whether among the poor or rich, must be the depository of some truths worked out by his own observations, or some curious results of his own experience, which, if they were published, would be new to most of us; and it cannot be doubted that a vast store of valuable medical knowledge lies concealed, especially in the remoter country districts, and that the greater part of it is lost to the world and disappears at the same time as its possessors.

In the Bristol Royal Infirmary, where the great majority of the following cases occurred, there are nine surgical wards, and about fifteen hundred surgical cases are annually admitted as in-patients; and each surgeon has the charge of all the in- and out-patients (including casualties) admitted every fifth week, as long as they continue to be under treatment. The cases of operations on the eyes were at the Bristol Eye Dispensary, as well as at the Infirmary, with perhaps rather a larger proportion in private practice. I am not aware of any particular advantage to be derived by distinguishing in a report of this kind the hospital from private cases, and therefore they will all be classed together, unless it appears that some change in the result of treatment may be traceable to this element in the case.

Upon looking over the respective numbers under the separate heads of the diseases, treated by operative measures, it will appear that some of the less important cases, which are generally considered to be of frequent occurrence, are represented by very small numbers; for instance, I note more amputations of the thigh than operations for hare-lip, and more operations for strangulated hernia than for fistula *in ano*, and thus no criterion is afforded of the comparative frequency of these disorders, because cases involving the slighter operations are treated by the practitioners under whose care they first come, and also of a considerable number no accurate notes or records have been kept.

A retrospect of only these last ten years during which I have been surgeon to the Bristol Royal Infirmary, and the necessary examination of my notes of the operations I have performed there and elsewhere during that period, have shown very clearly not only that the science and art of surgery are progressive, but that they make rapid and important progress, and that even in this time numerous valuable improvements have been introduced, and the public who derive the chief benefit of hospital experience are not sufficiently impressed with this fact, nor is it sufficiently urged upon them as an argument for giving liberal pecuniary aid to these truly English establishments.

In the following report, by far the greater number of the more important operations were performed while the patient was under the influence of chloroform, or chloroform with ether or alcohol, or after the application of the freezing mixture of pounded ice and salt, and unless there is anything particularly noticeable upon the subject of anæsthetics it will not be alluded to in the account of each individual case. I

refuse chloroform in the lesser operations, as squint and cataract cases and the removal of tumours, and the minor amputations, and wherever ice and salt can be conveniently applied.

Some of the cases have been described before in the pages of the Journal, but not in a connected or systematic way; and therefore I make no apology for briefly introducing them again in the order into which they will naturally fall; and lastly, to conclude these few introductory remarks, although I do not wish to provoke criticism, it is perhaps best to say that I hold myself solely responsible for all the opinions and methods of treatment described in the following cases, as well as for any remarks I may make upon the published reports and surgical papers of other writers.

The arrangement of the cases in a sufficiently intelligible order is very simple; and the following classification has been adopted, as being convenient and inclusive:—

1. Operations on the Face, Tongue, Palate, Neck, and Chest.
2. Operations on the Abdomen and Lower Part of the Intestine.
3. Operations on the Breast.
4. Operations on the Genito-urinary Apparatus.
5. Operations on the Eye.
6. Autoplastic and Orthopædic Operations.
7. Excisions of Diseased Joints and Bones.
8. Operations involving the Vascular System.
9. Tumours.
10. Amputations.

I.—Operations on the Face, Tongue, Palate, Neck, and Chest.

Under the first head is comprised a formidable list; viz., Hare-lip; Cancer of the Lip; Cancer of Tongue; Staphyloraphy; Epulis; Polypus Nasi; Tracheotomy; Suicidal Wounds of the Throat; and Tapping the Chest.

Hare-lip. In performing this operation, I use a strong and sharp pair of scissors, and German-silver pins, such as were used so freely (if they were not introduced) by the late Professor Dieffenbach of Berlin. The number of cases is eleven, all of which were successful, with the exception of two, where a slight aperture remained above. They will require but a very brief description.

Case I. J. M., aged 25, a strong labouring man, with single hare-lip of the right side. The fissure extended completely up to the nostril and was remarkably even and wide. He had the power, which I have noticed in other cases, of bringing the sides of the fissure into close contact, and of pressing them firmly together. I have seen no explanation of the mechanism of this action; but I believe that it is performed by the associated action of the *orbicularis oris* and the *depressor labii superioris*, supposing that a slip of the latter muscle is distributed upon each side of the fissure. The opportunity of verifying this supposition by actual dissection must be very rare; but should it occur, I hope it will not be neglected.

Our experience in the use of chloroform was obviously at that time not so great as it was afterwards; and some was given to him whilst he was in a sitting posture, on March 12th, 1850. As this was the first operation I had been called upon to perform publicly—*i.e.*, in the theatre of a hospital, with numerous spectators—I was anxious that, although it was a minor operation, everything should be conducted orderly and quietly; but, after a brief inhalation, he leaped up in a kind of frenzy, like a medical student under the influence of laughing gas, and began fighting and kicking, spitting and swearing, and hitting out so effectually, that for a moment or two he cleared a space around him: he was, however, immediately overpowered by numbers, and lifted upon the table, where I at once proceeded to operate.

The section on either side was *upwards* and *outwards* through the red part of the lip, and from that point *upwards* and *inwards* to the top of the fissure, so that the line of incision presented an obtuse angle on each side at the point where the red part of the lip joined the rest of the skin; and thus when the line was straightened by the application of the sutures, it was longer than the straight edge of the fissure was, and thus a notch below is to be obviated. Two pins and twisted sutures were used, and a single point of the interrupted suture at the surface of the lip.

On the third day,* I took out the upper pin and the thread suture; and on the fifth, I removed the lower pin, which had been passed opposite the upper margin of the red part of the lip, and it was found altogether healed.

Case II. J. W., aged 15 weeks. Single hare-lip of the right side, with cleft palate and prominence of the maxillary bone of the same side.

In this instance, I made one straight and one angular incision, so as to cause them to correspond, and it was further necessary to divide the frenum of the lip. Two pins were used; the first of which was removed upon the fourth day, and the second upon the fifth. The union above was not complete at first, but granulations sprang up, and it healed entirely.

Case III. F. M., aged 2. Single hare-lip of the right side, with cleft palate opening into each nostril, and with prominence of the bone between the fissure and the median line.

I removed the prominent portion of the superior maxillary bone with a bone nippers, and after applying lint steeped in turpentine to stop the bleeding, I operated as usual. Two pins were used.

On the fourth day I removed the upper pin, and on the fifth day the lower, and found it all evenly healed.

Case IV. J. T., aged 6 weeks. The operation was performed as usual on February 1st, 1853, and two pins were used; on the third I removed the upper pin, on the fourth the lower, and found the wound healed.

Case V. D. M., aged 5 months. Single hare-lip on the right side, with cleft palate and slight projection of the jaw in front. Two pins were used, the first being withdrawn on the fourth day, the second on the fifth, and he was discharged cured with an excellent lip within a week of the operation.

Case VI. A. F., aged 9 months. Hare-lip of the left side, with a fissure extending through the greater part of the hard and soft palate, and with a wide gap in her lip. I was obliged to separate the lip freely from the jaw at first, and then the steps were as usual. Two pins were used. On the fourth day, I removed the upper pin, but while I was applying a piece of plaster to support the lip, it gaped open and bled, and I could not bring the sides in contract. I removed the lower pin on the sixth day, and found the lip united at this part. She went out with a hole above through the lip, and after a time I operated again upon the same case, paring the edges with a cataract knife, and bringing them together by a pin. She was much improved by this, but an aperture existed above when I last saw the case, and this was one of those to which I alluded when I said that all were not absolutely successful.

Case VII. W. C., aged 25, had been operated on as a child, but as in the last case, an aperture remained above, and he came up from the country to have it rectified. I trimmed the edges, and passing in a long pin, brought the part together, and obliterated the hole. On the fourth day I removed the pin, and found that the sides had remained in contact, although it was not quite healed. He went home on the sixth day, with the lip going on well, and well satisfied with his improvement.

Case VIII. E. M., aged 4 years. Single hare-lip of the left side, with great prominence of the jaw of the right side in front, and fissure of the palate throughout. In this case it was necessary to separate the ala nasi of the left side and the lip from the subjacent bone, and to free the lip on the right side in like manner before the parts could be at all approximated. I then made the usual angular incisions to remove the margin of the fissure, and brought the sides together with two pins, and a fine suture below. There was considerable hæmorrhage. On the third day I removed the thread, on the fourth the upper, and on the fifth the lower pin, and found that all had healed well, and that there was less deformity about the left nostril than appeared probable in my first examination of the case. A few days afterwards, a little ulceration appeared at the part where the lip had been traversed by the pin, but it soon healed.

Case IX. L., aged 4 months, with double hare-lip and protrusion of the intermaxillary bone, so that the portion of skin intended by nature for a columna nasi and the central part of the lip projected in a line continuously with the tip of the nose, being supported by the globular projection of bone. The first steps were to separate the central piece of skin from the subjacent bone, and to remove the prominent portion, which was round like a marble. A good deal of hæmorrhage followed, so as to require a ligature. I then trimmed the edges, as well as the tip of the central flap, and brought the lip in place with pins as usual, passing the upper one through the flap, which was drawn backwards horizontally, so as to make a columna nasi.

In this case the pins remained in place for a week, when they were removed, and the result was satisfactory.

* Where the days are thus specified, third, fourth, etc., the day on which the operation was performed is counted as the first.

Case x. H. B., aged 4 years, with double hare-lip, fissure of the palate, and projecting intermaxillary bone with two teeth. In this case I dissected away the central flap from the subjacent bone, and loosened and partly pressed backwards the prominent portion. At a subsequent operation I operated on the lip, and brought it together as usual, and it united fairly, but not entirely, for when he went out, there was an aperture at the upper part. This boy, now eight years of age, has recently been readmitted, under one of my colleagues, and has undergone another operation to relieve the remaining deformity. The edges of the hole have been pared and the lip brought together, but it did not unite. The surface, however, began to granulate, and the aperture closed.

Case xi. Aged 7 months, with double hare-lip, cleft palate throughout, and prominent intermaxillary bone, from which two teeth were on the point of appearing. The central portion of skin was, as in Case 9, continued in a straight line with the nose. I operated and removed the bone, waiting a quarter of an hour for the cessation of the hæmorrhage, and then trimming the edges, brought the parts together as before, preserving the central bit of skin for a *columna nasi*, and using two pins. The child lost a great deal of blood, and appeared quite blanched. I removed the pins after the expiration of the usual period. The greater part had united, but the flap was loose, and moved up and down when the child cried. I brought the parts in contact as well as I could with the aid of some adhesive plaster, feeling vexed at what I looked upon as a partial failure, but I was agreeably surprised to find that granulation sprung up and the parts cicatrised in excellent position, and the case terminated satisfactorily.

Remarks. It is generally said that hare-lip is more frequent upon the left side than the right, but of these few cases, five were upon the right, two on the left, three on both sides, and of the side affected in one no record was kept. The eldest was twenty-five years old, and the youngest six weeks. No fewer than six had cleft palate and prominent bone; and upon this point my belief is, that the greater frequency of cleft palate in infants, as compared with adults, is due to the cure of the hare-lip cases. We know how the mere weight and slight permanent pressure of the lips keep the teeth in their proper place, and how they project when the pressure is removed; and I believe that when the natural firmness is given to the lips and cheeks by the early cure of the malformation, the two palate processes of the maxillary and palate bones gradually approach one another, and the scar on the cured lip is often the only memorial of a former hare-lip and cleft palate.

[*To be continued.*]

Transactions of Branches.

METROPOLITAN COUNTIES BRANCH.

ENEMATA OF SULPHURIC ETHER FOR ASCARIDES.

By T. Ogier Ward, M.D. Winkfield.

[*Communicated July 17th*, 1860.]

Having read in one of the periodicals that injections of sulphuric ether had been of great service in ascarides, I determined to recommend its use to a patient who had long been troubled with thread-worms. It was used as directed; viz., in a dose of fifteen drops in one ounce of water, which was retained in the rectum, the patient going to bed immediately afterwards. The result was, that the patient, a lady, aged about 36, was not annoyed again for above a fortnight, and then only very slightly; and a repetition of the enema kept her free for three weeks longer; so that she flattered herself she had met with something like a cure for this troublesome complaint; and I also entertained a similar idea, having found the treatment successful in another case of ascarides in the adult. This patient, like the other, found the ether most effectual at first, but it is now quite useless; and, with this feeling, I thought it a subject of sufficient importance to bring under the notice of the late meeting. Since that time, however, I find the thread-worms have returned, though not in such numbers as formerly; but it is a curious fact that the ether seems now to have lost its effect in this case, the lady being compelled to use it every night.

As this patient complained that she tasted the ether in a few minutes after the injection, I tried its effects upon myself one night just before bedtime. In three minutes by my watch, I perceived a strong taste of ether; and, on going to bed, my wife asked if I were unwell, and had been taking ether!

Another effect of the ether injection is, that it causes the patient to sleep very heavily, which property may be turned to good account in cases of sleeplessness in persons who cannot bear opiates. From the history and treatment of many cases, I am convinced that the common notion, that the *habitat* of the oxyuris is in the rectum, is quite erroneous. A single injection of quassia, salt, or even cold water, will completely empty the rectum of all its denizens, so that a repetition will not bring away a single individual; and yet the next night they will be as numerous as ever. Indeed, the fact that persons liable to worms are most troubled *after* the bowels have acted, may be taken as a proof that they are carried down into the rectum together with the fæces; which, however, may not contain a single specimen. I am therefore disposed to believe that the thread-worm resides in the sigmoid flexure, or in the cells of the colon; and I am supported in this view by having often found that a repetition of an injection will bring away the ova without a single worm. If my idea be correct, our treatment should not be directed to removing them from the rectum, but to destroying them in their dwelling-places by aloes and other bitter substances mixed with the food of the patient.

I may add, as an instance of apparent communication of worms from one person to another, that the husband of one of the ladies has been more or less troubled with the thread-worms ever since his marriage, seventeen or eighteen years ago. He has used the ether once, with the effect of relieving himself for some weeks from the ascarides: and though they have returned, yet they have given him so little annoyance that he has not cared to repeat the ether injection, as he dislikes its smell and taste.

SOUTH-MIDLAND BRANCH.

CASE OF ECTOPIA CORDIS.

By Edward Daniell, Esq., Newport Pagnell.

[*Read June 15th*, 1860.]

Although no immediate practical value may be attached to the observation of deviations from the ordinary laws of Nature, as presented by irremediable malformations, monstrosities, etc., yet these are, in a teratological and physiological point of view, of much importance. Structures not ordinarily available to sight while in a state of action, may, by being exposed to view as the result of displacement, develope facts which otherwise would be unattainable. Monstrosities, under certain conditions, are able to preserve life. *In utero*, their organisation goes on; and their development proceeds, even though organs essential to life may be displaced, and deprived of external protection, or arrested in their formation, as in acephalous cases. These abnormal conditions, then, have their physiological value; they show the distinction between fœtal life and that life which a properly developed air-breathing animal evinces when he passes from a dependent to an independent existence. In short, teratology is a subject worthy the scientific inquirer, inasmuch as the comparison of normal with abnormal developments may in the end lead to the establishment of truths, which it would be difficult to acquire under a constant condition of perfectability of the laws which regulate nature in the formation of animal life.

With these impressions, I feel no hesitation in presenting a case of heart-displacement which has recently come under my observation.

Case. Mrs. P., the wife of a tradesman of Newport Pagnell, sent for me on the 3rd of January in the present year, complaining of a sense of pricking about the epigastrium. This symptom was accompanied with a good deal of general fever, with quick pulse, flushed face, rigors, and coated tongue. She was, according to her own account, within a few days of her confinement. I prescribed what seemed indicated by her case, and in two or three days this condition of disorder yielded.

On January 6th, she was taken in labour. Her pains were good, and the labour seemed natural enough; but, on the rupture of the membranes, the flow of liquor amnii was enormous; the bed was literally saturated, and the floor of the chamber was comparatively flooded. In a short time, the child was safely delivered; but I was startled to observe a large tumour projecting from the chest. The situation of the bed was in a dark part of the room; and, at the first glance of the tumour, I thought it an enormous nævus; but, on removing the child to the light, I observed the tumour to pulsate, and, on closer inspection, I satisfied myself that I had met with one of those

rare cases of displacement of the heart, of which, it is assumed, scarcely one in a century occurs, and very few can be found in the records of medical literature. The placenta was slightly adherent; and to this condition might probably be due the symptoms my patient complained of three days before her confinement.

Having left my patient in safety, I turned my attention to this extraordinary phenomenon. The heart, denuded of its pericardium, was erect before me, resembling a pedunculated tumour, but performing its *systole* and *diastole* with undeviating and regular precision. I was anxious to collect some of my medical brethren to witness the phenomenon; but, unhappily, I could find none, except my late friend Mr. Collison, who, in a large midwifery practice extending over a period of sixty years, had neither seen nor heard of such a case, and, in his unwillingness to believe that the pulsating tumour really was the heart, drew it with his finger slightly aside. The child lay like an automaton; it had never breathed, nor moved; but when Mr. Collison drew aside the heart in this slight manner, I observed a gentle tremulous action pervade the limbs of the infant, and a movement especially in the lower extremities. In the meantime, the heart's action continued vigorous; and the violent distension of the auricles was such that it seemed as though their parietes must give way. I watched the action of the heart for nearly an hour, intending to remain until it ceased, which I assumed would occur when the whole of the arterial blood derived from the mother had lost its vitality. Unhappily, I was compelled to leave; but I learnt from those whom I had set to watch that it gradually lessened its energy, and ceased almost imperceptibly; but yet its movement continued for nearly four hours. When I returned, the action had ceased, and the child was dead, if it may be said to have lived.

You will observe by the drawing the perfect development of the child in all other particulars, save the hernial condition of the heart. There was no arrest of development; no deficiency of nutrition; no other character of monstrosity. On the contrary, its appearance was that of a child of full growth *in utero*, perfect in form, and very handsome. The heart itself, deprived of its pericardium, seems to have escaped at a very early period of gestation from its normal position, and to have fixed its habitation externally on the chest. It there grew in size, while the fissure through which it had escaped became closed in by the growth and development of the muscles and skin, so far as to have a foramen sufficiently free to present no impediment to the passage of blood through the large vessels—the continued circulation through which, no doubt, by constantly distending the vessels, maintained the patency of the foramen. Thus the supply of arterial and venous blood continued without interruption *in utero*, and might have continued to do so after birth, had not the lungs remained in a state of collapse.

Six hours after death, a *post mortem* examination was made, at which my friends Mr. Rogers and Mr. Hailey kindly assisted. The following peculiarities presented themselves:—The sternum was entirely absent, except in junction with the clavicles. The ribs ended in cartilaginous roundings. The absence of the sternum formed no impediment to the perfect development of the diaphragm, which had a firm attachment to the tissues and integuments surrounding the locality of the absent cartilage and bones of the lower portion of the sternum. We observed nothing abnormal in the chest. The lungs, of course, lay in the condition of collapse, as usually seen in children born dead. It is probable that, had we more minutely examined the anatomy of the vessels, we might have observed some deviations in their ramifications, from the fact of the large vessels of the heart being borne away so far from their normal position. But into these minutiæ we did not enter. The liver, stomach, and bowels, indicated no displacement whatever, and seemed quite healthy. The child was plump and fat. The heart and lungs were carefully removed, and I sent them to my friend Mr. James Paget, of St. Bartholomew's, who kindly placed them in the hands of Mr. Savory. This gentleman has favoured me with the following results of his examination ot the heart.

"Yesterday and to-day I have carefully examined your specimen of ectopia cordis.

"The heart itself generally indicates what is termed 'an arrest of development'; that is to say, its several parts have not arrived at that advanced stage of development commonly seen at the period of birth. The two auricles form one cavity, with scarcely a trace of septum. The septum of the ventricles is not complete, the two cavities communicating at their upper part; and the ventricles themselves appear to be imperfectly developed. The valves are natural in form and arrangement. Both ventricles of course communicate with the common auricular cavity; while, as usual, from the right proceeds the pulmonary artery, and from the left the aorta. The great veins open to a common orifice in the auricular cavity. The heart is altogether smaller than is usual at the period of birth."

Mr. Paget, speaking of the specimen, says: "Such a malformation is extremely rare. I should think that all the records of medicine would not supply more than twenty cases of such uncomplicated displacement as this of yours. Besides, the heart is remarkable by the very deep cleft at its apex, an indication of its arrest at a comparatively early stage of its development. I could envy you the sight you had of a live human heart. If the child could have lived, it might have settled many disputed points; being dead, it has enabled you to gain our thanks for one of the best specimens in the malformation series of our museum."

Remarks. I have devoted some time to searching the works of authors on malformation for analogous cases to my own, and have engaged several friends in the like inquiry. To them I am deeply indebted for the time they expended in the search. To one friend I am obliged for an extensive inquiry into the writings of continental teratologists, in the course of which he has collected some valuable observations, which I shall presently collate in such a way as to render them available to those who may be anxious to acquire a knowledge of such deviations as are presented by my case and by others. My own researches have been mainly confined to the examination of the history of heart-malformations in the medical literature of this country; but, although my library furnishes me with periodicals and other works extending considerably over a century, I can find but very few cases which can be regarded as approaching to that which I have described. There are instances of hernia of the heart on record; but they have been generally complicated with some other malformation. The simple cardiac protrusion is extremely rare; while of cases of hernia of the heart complicated with protrusion of other viscera, instances are to be found in the article Teratology in the *Cyclopædia of Anatomy and Physiology*, and in some other works.

In studying the pathology of these protrusions of the viscera, it is necessary to bear in mind the manner in which the anterior surface of the body is closed in during fœtal development. This process, in the words of Dr. Vrolik, takes place in the following way. "The opening on the anterior wall of the body closes itself first at its superior part, so as to cover the thoracic

viscera, while a part of the abdominal intestines still remain out of their cavity and in the sheath of the umbilical cord. Thus the thoracic cavity is already closed while the abdominal is yet open. Nevertheless, it sometimes happens that the abdominal cavity is completed, and that its viscera are perfectly closed, while the thorax remains open, and the heart is placed on its anterior surface." There may thus be various degrees and localities of defect in the anterior parietes. These have been classified by Isidore Geoffroy St. Hilaire, to whose elaborate investigations, contained in his *Histoire générale et particulière des Anomalies de l'Organisation de l'Homme et des Animaux*, we are indebted for much of our knowledge of teratological phenomena. The following table exhibits the arrangement followed by M. St. Hilaire. (*Op. cit.*, tome ii, p. 266.)

A. *Monstrosity not extending to the Thoracic Region.*

FAMILY I. *Aspalasome.* Lateral or median eventration, occupying chiefly the lower portion of the abdomen: urinary apparatus, genital organs, and rectum, opening externally by three distinct orifices.

FAMILY II. *Agénosome.* Lateral or median eventration, occupying chiefly the lower portion of the abdomen: genito-urinary apparatus absent or very rudimentary.

FAMILY III. *Cyllosome.* Lateral eventration, occupying chiefly the lower region of the abdomen: absence or very imperfect development of the pelvic member of the side occupied by the eventration.

FAMILY IV. *Schistosome.* Lateral or median eventration throughout the whole length of the abdomen: the trunk curved upon the abdomen: the pelvic members absent or very imperfect.

B. *Monstrosity reaching the Thoracic Region.*

FAMILY V. *Pleurosome.* Lateral eventration, occupying chiefly the superior portion of the abdomen, and involving also the anterior part of the thorax: atrophy or very imperfect development of the thoracic member of the side occupied by the eventration.

FAMILY VI. *Celosome.* Lateral or median eventration with fissure: atrophy or total want of the sternum, and hernia of the heart.

M. St. Hilaire gives the name of *celosome* (κηλη, a tumour; σωμα, the body) to the last family, because it is more than any other remarkable for the hernial displacement of organs, both of the abdomen and of the thorax. The family, then, while it includes my case, comprises also others which differ from it in the greater amount of viscera protruded. In cases of celosome, M. St. Hilaire remarks that the heart is remarkable, besides its displacement, for the very imperfect condition of the pericardium, and generally also for a structure more simple than in its normal condition. Sometimes, in fact, the interauricular or interventricular walls are incomplete; sometimes, as in a case recited by Stenon, the aorta has opened at once into the two ventricles.

In another part of his work, M. St. Hilaire treats specially of the hernial displacements of the heart; which, he says, may occur in three directions, and may be arranged, as Breschet has classified them, into the cervical or superior, the abdominal or inferior, and the thoracic or anterior displacements. It is with the anterior or thoracic displacement that we are especially concerned here. Of the cervical displacement, an example is perhaps to be found in the case recorded by Vaubonnais (*Acad. des Sciences*, 1742), of "a human fœtus born at the eighth month, whose heart escaped from the chest by an aperture at the upper part of the cavity; it was uncovered, and hung from the neck like a medal." This may, however, have been an instance of thoracic displacement high up; but the history of the case, as I have been able to obtain it, gives no further particulars than those already quoted.

Of the inferior or abdominal displacement, an instance is given by Senac, in his *Traité du Cœur*, lib. iv, ch. 8, where the heart had formed to itself a cavity in the diaphragm, which it pushed downwards, producing a strong pulsation in the epigastrium.

The case which I have related is an instance of anterior or thoracic displacement; and on this form of ectopia I therefore shall offer some remarks. Among the few cases of it which have been related, are the following.

M. Chaussier relates a case in the fourth volume of the *Bulletin of the Faculty of Medicine*, p. 93. There was brought into the Maternité a new born child, having at the upper and anterior part of the abdomen a soft hemispheric tumour, as high as one thumb and of the size of two, in which could readily be distinguished the alternate movements of elevation and depression of the organ, and contraction and dilatation of the ventricles. At each inspiration, the heart was raised, and appeared to partly enter the thorax; at each expiration it was carried forwards and downwards. By pressure, the tumour and the heart could be made to enter the thorax; but by this process the respiration was impeded; when the pressure was removed, the heart escaped. The opening by which the heart emerged from the chest was seated anteriorly and to the left side; the sternum and a portion of the ribs being there arrested in development. It seemed as if the upper part of the recti abdominales was also wanting, or that these muscles diverged from each other, as the tumour appeared covered only by integument. From the size of the tumour, it appeared likely to contain a part of the liver. In other respects, the child was well formed, and seemed likely to live.

Tourtelle (*Journ. de Méd.*, tome lxii) saw a child who had an opening in the lower part of the thorax through which the heart projected, reaching to near an inch above the umbilicus.

M. Martinez, a Spanish physician, has placed on record the account of a child, which lived twelve hours, in which the heart, deprived of pericardium, was placed in front of the chest; its apex was directed anteriorly, and its base posteriorly, and it appeared as if it were enframed in the skin. The alternate movements of contraction and dilatation of the heart were very visible, and the hand perceived them very distinctly by light pressure, not without causing some interruption to the respiration. The sternum was cleft through its entire length.

A German anatomist, Dr. Cerutti, describes a monstrous fœtus, remarkable in many respects. The heart had left the thoracic cavity by an opening situated at the inferior part of that cavity, and resulted from the absence of the xiphoid appendix of the sternum, and the left twelfth rib.

In the twelfth volume of the *British and Foreign Medical Review*, 1841, p. 533, is an account of a very interesting case which came under the notice of Professor Cruveilhier, where the child lived, and of course must have breathed, for a number of hours, with the heart projecting anteriorly from the walls of the chest. M. Cruveilhier availed himself of the opportunity of making some interesting observations on the sounds and motions of the heart.

From these few cases, it will be seen that anterior displacement may occur at any point of the sternum; sometimes towards its upper part, sometimes low down. The conditions of the bone under which ectopia may occur are thus described by M. St. Hilaire.

"The thoracic displacements are those in which the heart forms a hernia through an opening in the anterior parietes of the chest—an opening which results either from the median fissure of the wall (the sternum being, as in the young embryo, separated into two lateral halves); or from the absence of the inferior part of the sternum, or even from the entire absence of that bone.

"The thoracic displacement may occur without any other complication than the existence of a fissure, and the separation of parts ordinarily contiguous, and the more or less complete absence of the pericardium, which appears constant in these cases. It is also sometimes complicated with herniary displacement either of the encephalic organs or of the abdominal viscera; or of both at the same time. There are anomalies in the structure of the heart, and in the distribution and even the number of the vessels, frequently forming complications in these cases.

"I shall have occasion to speak of some cases where we have seen the sternum divided into two lateral halves, the heart resting *in situ*, and covered only by a membrane, so thin that the eye could follow its systolic and diastolic movements. The thoracic displacement of the heart without any other complication than the sternal fissure, is, so to speak, the same organic deviation with a further degree of anomaly. The fœtuses which have presented these examples, or in whom the opening of the thorax results from the total or partial absence of the sternum, have almost always died in a few hours—or at most, in a day or two. They have never been raised, whatever has been the care bestowed upon them. . . . .

"The median division, either partial or complete, of the sternum, can take place not only without the heart making a hernia externally to the chest, but also without the cutaneous parietes of the chest being divided along the median line. We have observed these remarkable vices of conformation most frequently in the fœtus or in the newly-born infant, but they are not necessarily fatal, and may exist in the adult. When the division is *partial*, the sternum is either bifid at one of its

extremities, most frequently the inferior, or the middle portion of the sternum is wanting; or it presents an elongated opening extending more or less along its length. When the division is *complete*, there exist two half sternums, separated by a membranous interval, and more or less moveable one upon the other. Senac gives a very remarkable case of this kind where this vice of conformation was not restricted to one individual, but was transmitted hereditarily to others in the same family." That there seems to be hereditary tendency to malformation in some families, may be shewn by the fact that I attended a woman in confinement three times, and on each occasion the child was born with a supernumerary thumb.

The sternal fissure has been observed in birds. Winslow gives a case in a pigeon.

Ectopia of the heart may then attend non-closure of the thoracic parietes, arising either from fissure or from entire or partial non-development of the sternum. The abnormal state of the chest-walls does not, however, necessarily entail displacement of the heart; for several instances are known in which the heart, merely covered by the integuments, has remained *in situ*; and in which, contrary to what happens in ectopia, the individuals have lived and enjoyed fair health. M. Chaussier relates the case of a soldier at Dijon, in whom the heart was situated at the anterior part of the sternum, about the centre, covered only by the skin. The sternum was wanting at its lower part; the ribs were deprived of the cartilages by which should be connected with the sternum. Nevertheless, the man was robust and healthy, and bore the fatigues of his calling without suffering. Another instance of the same kind has been in recent years made familiar to the profession in the person of M. Groux, in whom the sternum is deficient, leaving the heart in its normal position, but covered by the integument in such a way that a number of physicians have taken the opportunity of making observations on the physiological action of the organ.

We find, then, the following conditions: 1. Fissure or absence of the sternum without displacement of the heart; 2. Fissure or absence of the sternum, with protrusion of the heart covered by the skin, as in the case of the child described by Chaussier; 3. The same conditions of the bone, accompanied by protrusion of the heart, which is uncovered by pericardium.

Cases of ectopia cordis have been estimated as of physiological value, on account of the possibility of making observations on them with regard to the action and sounds of the heart. In the case which occurred to Professor Cruveilhier, that able physician, as has already been stated, availed himself of the opportunity afforded. But it is a great question in my mind whether, if the same close observations practised by Professor Cruveilhier had been adopted in reference to my case of ectopia cordis, any reliable facts could have been elicited. The anatomy shows internal malformation to a great extent in the organ itself. This abnormal condition could not have given normal sounds, or even normal motions; hence the inferences to be drawn would not have helped to settle any physiological difficulty, or to throw light on any questions either in reference to the motions or sounds of a properly organised heart. And it must be remembered, that ectopia cordis is, so far as correct observations have been made, ordinarily attended by internal malformation of the organ.

It is rather a curious fact that, so far as my researches have extended, I have been unable to find any records of cases of ectopia cordis amongst the medical literature of this country; that is, cases of children born with hernia of the heart in Her Majesty's dominions. My opportunities of research have been limited; there may be cases on record in works to which I have not had access. With our continental neighbours they seem more common. I am not inclined to speculate upon causes likely in any way to induce such malformation; although I know that in all ages of the world they have been attributed to conditions of excitement and disturbance in the minds of pregnant women. Our forefathers attributed these deviations from nature's ordinary correctness to demoniacal influence—a position which no sensible man could entertain; but whether violent political changes and stirring events, creating continual fear and apprehension, harassing even the domestic hearth, would tend at all to arrest the proper development of the fœtus *in utero*, is a question which might be a subject of some consideration. I am told in a private letter to myself, that cases of heart displacement and hernia of the heart are not uncommon in Rome. Certainly there can be no comparison between the quietness of the domestic hearths of England and the peaceful spirits which pervade them, and the condition of the homes of France and Italy, so long tried by political discord, religious agitation, and political tyranny. Be this as it may, if I might venture, while treating upon so grave a subject, to hazard a loyal aspiration, I would fervently hope that Her Gracious Majesty's liege subjects may in the future, as at present—and as we know in the past—be always found politically, physically, and morally, with their hearts in the right place.

In conclusion, I would beg to refer those who may desire further information on the subject of the monstrosity which has formed the subject of my paper, to the works of the following authors:—

Breschet, G. Mémoire sur l'Ectopie de l'Appareil de la Circulation. This is a very complete monograph on the subject. He records four cases under the head of "Ectopie Thoracique du Cœur."

Buttner. Wahrnehmungen. Königsberg. 1709. With plates. One plates represents a case of pure ectopia cordis very like mine.

Cyclopædia of Practical Medicine. Vol. ii, p. 337.

Fleischmann, G. De Vitiis Congenitis circa Thoracem et Abdomen. Erlang. 1810.

Hallett, Charles H. Observations illustrating the Anatomical Structure and Physiological History of Monsters with Eventration. *Edinburgh Medical and Surgical Journal*, vol. lxviii. 1847.

Vrolik, W. Achille. Teratology, in the *Cyclopædia of Anatomy and Physiology*. He gives a short account of the true ectopia cordis, uncomplicated with other malpositions; and refers to the four cases recorded by Breschet, and to three cases recorded by Otto.

Vrolik. Tabulæ ad illustrandum Embryogenesin Hominis et Mammalium, tam naturalem quàm abnormam. Amstelodami. 1849. This work, although most elaborately illustrating most congenital deformities, has but little bearing upon the true ectopia cordis.

Zuliani, Gibellini, M.D. De quibusdam Cordis Affectionibus. Brixiæ. 1805.

Introductory Lectures.

ST. THOMAS'S HOSPITAL.

The Introductory Lecture was delivered by R. D. Grainger, Esq., F.R.S.

After some introductory remarks, Mr. Grainger said that, as the present was the last occasion on which he should address the students in the capacity of teacher, he was anxious to submit some remarks on the fundamental nature of organised bodies and the forces acting on them, feeling assured that even with respect to those who are commencing their studies, he would best consult their ultimate advantage if he could succeed in conveying to them some right and clear perceptions as to the essential character of that living mechanism, the disturbance of which it is the one object of medicine to prevent, if that be possible; to rectify it, if it has actually occurred. Such an inquiry would, moreover, not be misplaced, since even in the present day the prevailing notions concerning the nature of those forces upon which life and organisation depend are, it seemed, fundamentally erroneous. What he was about to submit had reference solely to the phenomena of the mere organic and animal life, to the actions of the body alone; that it has no relation whatever to the conscious existence, and still less to the spiritual.

With this all-essential restriction, it might be assumed, that as the living body is admittedly composed of the common elements of matter; that as those elements are in most organic substances known to be combined in strict accordance with the laws of chemical affinity; that as in a multitude of instances, to which the exact science of the present day is continually adding, it is recognised by all that the actions of the living body are either chemical or physical in their character; so in reality is proved the operation of physical forces, and all the so-called vital actions are as essentially dependent upon these same powers. Views like these have at various epochs been enunciated with greater or less precision, but nothing has been firmly established; whilst, on the other hand, volumes have been written to prove that the phenomena of living bodies are altogether peculiar and depending on forces to which there is nothing analogous in common matter. Even in the case of

those processes which obviously are closely allied to chemical and physical phenomena, physiologists spoke of them as altogether peculiar and vital. There were many of those terms—such as animal heat, vital elasticity, the chemistry of life, and so forth—which, violating in themselves the sublime unity displayed in the primary forces of nature, were coined with the express object of teaching that the living actions were altogether *sui generis*. No very clear ideas were attached to such expressions, but whilst they prevailed, they involved many of the prime questions of physiology in the same hopeless obscurity as would be caused in astronomy if it were admitted that there were two distinct kinds of attraction or two laws of gravitation.

In considering this question, it must be recollected that only the most universal principles are concerned, whereas it seems many of the prevailing opinions have reference merely to secondary properties and phenomena, which have no significance to the natural philosopher or the physiologist. Form, magnitude, colour, and like sensible qualities, are all subordinate points; indeed, one of the very first lessons the student has to learn is to discipline the senses, which by themselves are liable constantly to mislead, since in nature the obvious is rarely the true. Who by any sensuous observation could ascertain that the ultimate particles of matter, which are infinitely minute, never actually touch each other even in the densest substances, as a mass of flint, or a plate of polished steel—nay, that no amount of force can compel them to come into contact, since all bodies, even water, are compressible; that the ultimate particles are thus free to move among themselves in the most solid bodies, and may—even do—incessantly, like the earth itself, as De la Rive infers in his theory of electricity. Similar illustrations abound in organic matter. Thus the blood may be scarlet, as it is in the vertebrata, or colourless, as in the numberless tribes of invertebrate animals, insects, mollusca, and so forth; but it is essentially the same fluid; and so the breast-bone may have a narrow projecting keel, as in birds, or be flat and expanded, as in the chelonia, and yet present exactly the same typical parts in both. And so in the case of the forces implicated respectively in organic and organised bodies: it may in the present state of knowledge be very difficult to demonstrate their ultimate identity. Nor need this be a matter of surprise when we recollect how very recently the intimate relations of the several physical forces themselves have been discovered by such researches as those of Oersted, Faraday, and Graham. Chemical force, electricity, magnetism, caloric, light, act and react on each other in the mode signified by the term correlation, and are probably, as many profound philosophers suppose, only different manifestations of one universal, all-pervading force.

To proceed to the organic forces, such as the nervous and the muscular, we perceive a current of the former passing through the motor nerve, crossing the sarcous matter at right angles, as the latest, as well as earlier observations prove, like the electric and magnetic currents moving in the direction of the equator and poles of the earth, and thereby evoking the muscular force; whilst again there passes out of the living muscle a force which, as in the experiments of Matteucci, excites the nervous force. We know, further, from the same penetrating observer, that this muscular current carried along the coils of the galvanometer, induces the same kind of deflection of the magnetic needle as electricity. It is, moreover, most remarkable and instructive, as Dr. Todd pointed out, that although this muscular current is thus so closely allied to electricity, it is so far distinguished from it that it is arrested by conductors, as when a thin film of gold is wrapped round the living muscle, whilst it readily traverses non-conductors, phenomena the very counterpart of what Professor Müller pointed out years ago in regard to the nervous and electric forces. Now, although this may seem to indicate an ultimate and essential difference between the electric and muscular currents, it presents the very same condition of things as that expressed by the term correlation of forces.

The mere fact of the existence of differences in physical and vital forces is therefore not in itself sufficient to demonstrate that there is a primary essential distinction between them. In the case of animals, the error which almost universally prevails, and is, he believed, more misleading than any other, is the idea that their actions exhibit such marks of intelligence, and are so exquisitely adapted to ensure the designed end that they cannot be referred to the operation of physical forces. To show that this is no mere allegation on my part, it is not necessary to go back to the ancient hypotheses, to the *Anima* of Stahl, or to the *Archæus* of Vanhelmont. It will suffice to refer to the views of modern physicians and surgeons. Thus, the late Dr. Prout, seeing in every part of the animal economy unequivocal marks of the adaptation of means to ends, inferred that in the various parts of every organic body there exist intelligent agents, "superior to and capable of controlling and directing the forces operating on inorganic matter," and thereby affecting the vital phenomena. And so in respect to pathology. Mr. Grainger remembered conversing with a very eminent surgeon who, whilst admitting the existence of the endosmotic force of Dutrochet, urged that no such mere physical power could account for the separation of a mortified part from the living body, such as the detachment of the sequestrum in a diseased bone, because this process gave evidence of perfect design. These erroneous opinions still prevailing among so many medical men, render it necessary for the student always to keep in view the truth recognised by the great teachers of physical science, that the whole of nature is full of design and of intelligent action, produced by agents in themselves unintelligent. What, in fact, in its widest acceptation, is law, but the operation of the Divine Will so controlling the forces of the universe as to produce a pre-ordained, specific, and intelligible result? No writer that he knew has set forth this great principle more forcibly than our great exemplar, Harvey; who, contending against the very error we have indicated, is at pains to show that the common elements of matter and the forces connected with them—air, water, fire, the ocean, the very winds which waft navies to either India, nay, even round the globe, and often by opposite courses—are, as he so eloquently expresses it, subservient to the will of the supreme, intelligent, and eternal God; thereby surpassing their own powers, producing that exquisite order, harmony, and design, which are evinced as plainly in the globe we inhabit as in the most elaborate and perfect animal. To pursue and illustrate this great argument, we may ask why are the lofty Andes placed at the extreme western verge of South America, if their position be not in foreseen and strict relation to the direction of the trade-winds, those grand water-carriers by which this continent is fertilised? Had this range of mountains been placed in the eastern border they would have intercepted, as by a wall, the aqueous vapour borne from the Atlantic, and the vast forests and valleys now watered by the largest of all rivers, the Maranon, and redundant with vegetable and animal life, would have been converted into an arid, burning plain, identical with the rainless region of Peru, where a second kind of Sahara being produced, the lama, the representative of the camel in the New World, and a few other animals, find a scanty, but yet to them sufficient existence. One other instance may be permitted, since it is more individually connected with physiology—the rapid ascension into the highest strata of the atmosphere of the heavy carbonic acid generated by respiration, combustion, and putrefaction—a phenomenon in which one physical power, diffusion, overcomes another, gravitation, both being but modifications of one force, attraction, with the obvious intention of removing a poisonous gas from the immediate surface of the earth, which, if left alone to the power of ordinary attraction, would have rendered animal existence impossible.

Mr. Grainger next combatted the argument in support of special vital forces, that organic matters are altogether peculiar in their chemical constitution, attributable to what is often termed the chemistry of life, and that nothing like them is found in inorganic matter; and also another opinion, which relates to the internal arrangement of the parts of which organised structures and inorganic bodies are respectively composed. There could be no doubt that in this, and perhaps in other countries, the overruling influence of the Hunterian doctrine of a vital principle had most powerfully tended to the propagation of the erroneous views which had been touched upon. The great instances adduced by Hunter in support of his theory of life, and to which he recurred again and again in his writings, relate to the cause of the coagulation of the blood, the resistance of a freshly laid egg to freezing, and the power which enables the stomach during life to resist the solvent action of the gastric juice. In each of these instances, Hunter, as it is well known, attributed the phenomena to the defensive power of life, to his vital principle; and, in the then state of knowledge, it was scarcely possible to draw any other inference, so plain appeared to be the evidence, and so inevitable the conclusion. It was, however, very remarkable and instructive that modern science, which in such a multitude of instances had enabled them to distinguish the real from the apparent, had demonstrated the fallacy of all these instances. Thus Dr. Richardson has shown that the coagulation of the liquid fibrine

was owing to the loss of its ammonia; whilst Mr. Paget, by his interesting experiments, had proved that the fresh egg of the hen remained unfrozen when exposed to a temperature several degrees below 32°, not because it was alive, but because the mechanical disposition of the albumen, as in the similar instance of the leaf of a vegetable, prevented the watery particles from running together into crystals of ice. From these and similar considerations, he was satisfied that, save and except the sentient and truly living soul, every part and organ of the human body was formed of the common elements of matter, combined by pure physical and chemical forces, and acting exclusively in obedience to those powers.

Homage was rendered by Mr. Grainger to the memory of the eminent surgeon, Benjamin Travers, whose loss they had lately to regret. After Hunter, he knew no one who had effected so much for scientific surgery, or whose writings had had so powerful an influence in improving this department of their profession. He had great satisfaction in stating that, owing to the wise munificence of one whose name would find an echo in every English heart, Florence Nightingale, one of the greatest wants in the management of the sufferers from accident and disease, skilful and tender nursing, promised to be supplied. There were at this time training in the wards of St. Thomas's Hospital fifteen nurses, supported entirely by the Nightingale foundation, who had been selected with great care, and who, after proving themselves qualified by examination, would be sent to public institutions to minister to the sick.

Mr. Grainger then stated that having, in consequence of ill health, been obliged to resign his professorship at St. Thomas's Hospital, he was anxious to render his grateful acknowledgments to the authorities, to his colleagues, and the students, for the unvarying kindness he had experienced at their hands. In conclusion, he invited the attention of his auditors to the Christian Medical Association, a society of professors and students, formed for the development and support of Gospel truth among the rising members of the profession, urging them to enrol themselves in its ranks, and to attend its meetings.

GUY'S HOSPITAL.

The Introductory Lecture was delivered by Samuel Wilks, M.D. After remarking on the necessity which exists for the physician to draw instruction from every branch of science, he proceeded to speak of specialities in medicine. He considered that it was impossible to treat one organ separately; and, as regarded any additional knowledge of disease which was said to be obtained by the attention being directed to any particular form of malady, he much doubted if this was the case, since diseased conditions were so commingled that they could not be isolated; and, taking cancer as an example, the selection of cases of this affection, as it attacks the external part of the body only, and isolating it from other morbid conditions from which it has no actual line of separation, appeared to Dr. Wilks to be the very best method for remaining utterly ignorant of its nature. He was sorry to think that special hospitals were established for interested motives; and he spoke of the degraded position in which a medical man placed himself who was always begging for his charity and advertising his cures in the newspapers. That the speciality system, however, was not a novel one, was seen by a quotation from one of Goldsmith's admirable essays, in which he very properly holds it up to ridicule:—"In other countries, the physician pretends to cure diseases in the lump. The same doctor who combats the gout in the toe shall pretend to prescribe for a pain in the head; and he, who at one time cures a consumption, shall at another give drugs for a dropsy. How absurd and ridiculous! This is being a mere Jack of all trades. Is the animal machine less complicated than a brass pin? Not less than ten different hands are required to make a brass pin; and shall the body be set right by one single operator? The English are sensible of this force of reasoning. They have one doctor for the eyes; another for the toes; they have their sciatic doctors and inoculating doctors; they have one doctor who is modestly content with securing them from bug-bites, and five hundred who prescribe for the bite of mad dogs." Dr. Wilks thought that the profession lay open to this ridicule, and that therefore it was time for its members to consider seriously how by any such methods of practice they were imitating the charlatan, and really obscuring the boundary which had been hitherto so well marked between them. He thought that the specialists were enemies to the profession, since they taught the public to believe that particular affections require special modes of treatment; whereas it ought to be the effort of its members to teach that a long observation of disease is necessary to the successful undertaking of the cure of all its manifestations, and that the best therapeutics are founded on a knowledge of general principles. The notion that there were particular remedies for different complaints was a vulgar error; but he was sorry to say that it was applied by some unworthy members of the profession for their own interested motives. He considered that the disconnection of the profession from the Apothecaries' Hall, and its re-erection on the basis of the College of Physicians, would be of immense benefit to the public; for they would thus be taught no longer to associate in their mind the art of medicine with drugs. He believed that this would be of much more advantage than the Medical Act. The Register was of little use, while gentlemen whose names were found within it were guilty of practices which were only worthy of the advertising quack. The distinction founded on titles was trivial and to a certain extent artificial, whereas he (Dr. Wilks) would rejoice to perceive a substantive difference—that those gentlemen who were legitimately registered were in no way imitating the charlatans who were prosecuted by the registration societies. The students who had finished their course had an arduous task before them: and the most tempting and prosperous opening for them which he knew was to take up some particular organ of the body, and maintain (by advertising a worthless book on the subject) some especial knowledge of the treatment of its disorders. He warned the students, however, against this, as they would be assisting in ruining the noble character of the profession.

British Medical Journal.

SATURDAY, OCTOBER 6th, 1860.

THE INAUGURAL ADDRESSES OF THE WINTER SESSION.

It cannot have been overlooked that of late years the practice of giving inaugural addresses at the opening of the medical session has acquired an increased importance—an importance which, we are glad to see, is no longer confined to the comparatively narrow limits of our own profession. When we find the daily papers, and especially the cheap daily papers, devoting whole pages of their journals to these addresses, we may feel certain that our science is taking up an increased space in the public eye; and that, as education spreads, so the truths we have to tell put on an universal significance, which cannot be confined to the theatres of our hospitals. And this public interest in the voice of medicine, if we are not mistaken, is tending more and more every year to give a higher tone to these manifestoes of our hospital teachers. Formerly, it used to be the rule to adopt a purely didactic tone on these occasions. The pupils were then supposed to be the only audience addressed; and they were reminded, not always in the most judicious manner, of the difficulties that lay before them in their professional lives, and frightened by the almost superhuman labour that was demanded of them. They were, moreover, mildly lectured as to their moral conduct, which, by implication, certainly impressed one with the belief that they did not exercise even the average decencies of conduct. There was probably some foundation for the tone of teachers to students twenty years since; but as Dr. Pitman, at St. George's, justly observed, "happily, the days are past when idleness, profligacy, and vice, are synonymous with the term medical student; and that the present variety of the genus would be elevated by Mr. Darwin himself to the rank of a distinct species."

Be that as it may, it is certain that the old fashion of "sermonising" students, if we may use the term without offence, is rapidly giving place to a series of addresses, which are fast resolving themselves into reviews of the present state of medicine, and its relations to other sciences. The more publicity that is given them, the more certainly they will escape from the didactic tone; and this, we firmly believe, will be no great loss to the student, whilst it will be a great gain to the community at large. It certainly is of the last importance to the profession that it should stand before the public as the exponent of scientific ideas, rather than in a commercial light, as intent upon transmuting the diseases that afflict humanity into so much gold. The various addresses given at the opening of the present session, both in the metropolitan and provincial hospitals, certainly are calculated to disabuse the public mind of any such impression. Dr. Wilks of Guy's made some very judicious remarks, for instance, with respect to the overdrugging system, which we conscientiously believe has directly sprung out of the present relations of medicine to the Apothecaries' Company.

"He considered that the great hope of the regeneration of the profession lay in the promised connection with the College of Physicians, and thus its necessary severance from the Apothecaries' Company; for it was his strong conviction that a profession and a trade having been so long associated together in the public mind had been fraught with the greatest evil. It had appeared, indeed, as if a druggist's shop had constituted the very basis of medicine, and that the *Pharmacopœia*, or a particular method of physic-giving, formed the foundation of the art. Nothing could be more erroneous than such an idea; for he believed that, if Guy's Hospital dispensary was destroyed, their wards would still be filled with patients, to whom great good could be done without any medicines, which enlightened physicians considered nowadays to be only ancillary. The belief, also, that legitimate medicine was founded on a system of drugs was highly mischievous, since it became thus capable of comparison with every system of quackery, these systems being founded on some specific mode of cure without the possession of any other merits. Take that method of cure away, and the system was dissipated; but not so with orthodox medicine, which was founded on a knowledge of anatomy, physiology, and of the body in a state of disease."

The public have so long been accustomed to look upon drugs as specifics for diseases, that they have come to the conclusion that the drugs constitute the sole power of medicine. Hence they are taken with any nostrum which is only loudly enough advertised, totally regardless of the fact that the *materia medica* is only one of the many arrows which the physician carries in his quiver to launch against disease. It requires the authoritative voice of the public teachers to dissipate such an erroneous idea; and for this reason we hail with the greatest satisfaction the wide publicity now given to their orations. Neither must we neglect to observe, that medicine itself cannot fail to gain some direct advantage from these annual addresses; for we find a freer air ventilating through them than men like to adopt in the class-room. Even the errors of teaching do not go unscathed; and a wider and more liberal method of viewing our profession with regard to the great truths that lie about us on all hands is inculcated.

"The lecturer (Dr. Wilks) insisted that, at the present day, since the discovery of the corellation of all natural phenomena, it behoved the doctor to look around him and draw instruction from every branch of science and even from the affairs of mankind generally, for that those only who have a wide range of observation and thought can hope to elevate their respective professions. 'For example,' he said, 'I take up Darwin's well-known treatise and discover the difficulty which exists, both in the animal and vegetable kingdom, in defining species, and how all created nature has, as it were, a tendency to run together. The opinions there expressed only tend to corroborate my own views, long maintained with respect to disease, that the so-called typical affections of which we speak are to a certain extent artificial, or that we select certain similar examples of maladies to enable us to apply names to what in our ignorance we choose to call types. The student soon finds for himself those admirable models of cutaneous diseases in yon museum are but representatives of the more characteristic eruptions, while in practice he knows that he meets with them in every variety and combination. I might illustrate what I mean of the relation of one subject to another in fifty other ways, but another example will suffice, and has often pressed itself upon me with considerable force—that is, that what is true of man individually and of man in the aggregate, is true also as regards the morbid manifestations of his being. When we look around into the political world, and see this sudden outbreak of its peoples, or that unexpected revolution, it wants but a moment's consideration to perceive that these are but the outbursts of some long pent-up passions, just as the explosion of the boiler is the result of a long-continued undue pressure of its steam, or the explosion of the mine by the slow burning of the match. In the same way, if we look to individuals we do not discover that the man who has been eminent for his respectability, though unexpectedly discovered dishonest, has therefore for only a limited period followed a course of roguery. From this contemplation of man in general I see a striking resemblance in his corporeal operations. I see, in fact, that the most important changes in the body are of a chronic kind. Just as in history the great revolutions may figure as the most remarkable events, yet in philosophy, if their slow beginnings can be written, so in the same way, although our best books may treat of the acute forms of disease as the types, yet a more profound consideration of the subject will, I think, show that the more chronic or slower changes are those to which we should rather give our attention, and that so far from chronic diseases succeeding the acute, as has usually been taught, the contrary is nearer the truth. I need scarcely illustrate my meaning by alluding to the sudden deaths arising from apoplexy or rupture of the heart; for, unexpected though they be, we know that they are but the consequence of long-continued changes in the blood vessels in the one case, and of equal chronic changes in the muscular tissue in the other case."

We would also draw attention to the very philosophical address of Mr. Grainger of St. Thomas's, which is full of speculative views with regard to the correlation of the great forces of Nature. In reading such an oration as this, which might have been addressed with advantage to a scientific audience in the Royal Institution, we cannot help contrasting it with such humdrum performances as the students of twenty years ago were treated to. The advances which medical teaching has made of late years cannot be better tested than by the nature of these sessional addresses; and we think we may say, without unduly glorifying our own craft, that they give the clearest testimony to the active manner in which medicine is marching in the van of scientific progress.

THE WEEK.

The following is a simple enumeration of the introductory addresses delivered at the medical schools, in addition to those already noticed. At St. Bartholomew's Hospital, Mr. Savory described in eloquent terms the charms of scientific labour, and inculcated on his hearers the necessity of genuine hard work. "Genius", he said, "commonly meant labour". At the London Hospital, Dr. Barnes delivered an address replete with advice and encouragement. At King's College, Dr. George Johnson, in the course of his lecture, took occasion to comment on the loss recently sustained by the institution in the person of Dr. Todd, whose widow, he stated, has presented the large and valuable library of her lamented and talented husband to King's College Hospital. At St. George's, the introductory

address was given by Dr. Pitman; at the Grosvenor Place School, by Dr. Bloxam; at the Westminster Hospital, by Mr. Power; at the Middlesex Hospital, by Dr. C. Coote; at Charing Cross Hospital, by Dr. Chowne; and at St. Mary's, by Dr. Tyler Smith. Among the provincial schools, the session of the Liverpool Infirmary School of Medicine was opened by Dr. Gee; and that of the Manchester School of Medicine, by Mr. E. Lund.

Our medical contemporaries in the French capital have announced, in terms of regret, the retirement of M. Ricord from the scene of his active and useful labours in the Hôpital du Midi. His present retirement is, we learn, in anticipation of the obligation imposed by law on the medical officers of hospitals, of resigning their posts at the end of a certain period; which, in the case of M. Ricord, would have expired in January next. The regret which is evidently felt on the occasion in France cannot but be shared by the profession of all countries where his name is known, and where his labours in the elucidation of a most important specialty have been at all appreciated. Yet, so far as appears, age and infirmity have not laid heavy hand on him; and we may yet hope that from his mind and pen there may emanate not a little that shall be worthy of his name, and of high value to the science and art of surgery.

Association Intelligence.

ADMISSION OF MEMBERS, AND PAYMENT OF SUBSCRIPTIONS.

The following are the Laws of the Association regarding the Admission of Members, and the Payment of their Subscriptions.

"*Admission of Members.* Any qualified medical practitioner, not disqualified by any bye-law, who shall be recommended as eligible by any *three* members, shall be admitted a member at any time by the Committee of Council, or by the Council of any Branch.

"*Subscriptions.* The subscription to the Association shall be One Guinea annually; and each member, on paying his subscription, shall be entitled to receive the publications of the Association for the current year. The subscription shall date from the 1st January in each year, and shall be considered as due unless notice of withdrawal be given in writing to the Secretary on or before the 25th of December previous.

"If any member's subscription remain unpaid twelve months after it shall have become due, the publications of the Society shall be withheld from such member until his arrears be paid.

"The name of no member shall remain on the books of the Association, whose arrears extend over three years; but the omission of the name from the list of members shall not be deemed, either in honour or equity, to relieve any member from his liability for the subscriptions due for the period during which he has availed himself of the privileges of membership."

Either of the following modes of payment may be adopted:—

1. Payment by Post-Office Order to the Treasurer (Sir C. Hastings, M.D., Worcester), or to the undersigned.

2. Payment to the Secretary of the Branch to which the member belongs.

3. Members can also make their payments through the publisher of the British Medical Journal, Mr. Thomas John Honeyman, 37, Great Queen Street, Lincoln's Inn Fields, W.C., by post-office order, payable at the Western Central District Office, High Holborn.

Philip H. Williams, M.D., *General Secretary.*

Worcester, October 1860.

LETTERS AND COMMUNICATIONS.

Letters or communications for the Journal should be addressed to Dr. Wynter, Coleherne Court, Old Brompton, S.W.

Letters regarding the business department of the Journal, and corrected proofs, should be sent to 37, Great Queen Street, Lincoln's Inn Fields, W.C.

BRANCH MEETING TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
Birmingham and Midland Counties. [General Meeting.]	Hen and Chickens Hotel, Birmingham.	Thursday, October 11th, 6 P.M.

EAST YORK AND NORTH LINCOLN BRANCH: GENERAL MEETING.

A General Meeting of this Branch was held at the Yarborough Arms, New Holland, on Wednesday, September 26th, at three o'clock in the afternoon; W. H. Eddie, Esq. (Barton), President, in the Chair. There were also present: F. B. Anderson, Esq. (Hessle); J. P. Bell, M.D. (Hull); Sir H. Cooper, M.D. (Hull); R. Craven, Esq. (Hull); J. Dix, Esq. (Hull); H. George, Esq. (North Thoresby); T. Hobson, Esq. (Kirk Ella); K. King, M.D. (Hull); W. J. Lunn, M.D. (Hull); J. Morley, Esq. (Barton); H. Munroe, M.D., F.L.S., Hon. Sec. (Hull); H. Sandwith, M.D. (Hull); S. Watson, Esq. (Cottingham); and as visitors: L. M. Bennett, Esq. (Winterton); D. Mackinder, M.D. (Gainsborough); H. Soulby, M.D. (Hull); and T. Tudor, Esq. (Hull).

Papers. The following papers were read:—

1. On Diphtheria and its associated Diseases, as it appeared at Barton and the Neighbourhood in the year 1858 and 1859. By W. H. Eddie, Esq.

2. Case of Cancer of the Penis. By John Morley, Esq.

3. Microscopical Examination of the same, with Illustrations. By H. Munroe, M.D.

4. Case of Ulceration of the Common Carotid Artery: Ligature: Death. By K. King, M.D.

5. Case of Traumatic Aneurism of Radial Artery: Treatment by Compression, Flexion, and Extension of Forearm. By R. M. Craven, Esq.

These papers, with the discussions upon them, will appear in a future number of this Journal.

The Journal. Mr. Dix made some caustic observations relative to the expense of the Journal, the debts of the Association, and the number of its members; and proposed that a Committee be formed to inquire into the condition and prospects of the Association, and to report thereon.

Sir H. Cooper spoke of the resolution being couched in too general terms, and that no good was likely to result from any decisions which so small a Committee might arrive at.

Dr. Munroe and others opposed the resolution, as having no useful tendency; and, after some discussion, either from the lateness of the hour, or the proposer not pressing the resolution, it was, at all events for a time, abandoned.

After the business of the meeting was over, the members and friends partook of a most excellent dinner. The usual loyal toasts having been given,

The President proposed "The Prosperity of the British Medical Association".

Sir H. Cooper responded, and gave a short history of the Association, its struggles, and its difficulties; and showed that, by unanimity of feeling and well directed efforts on the part of its members, the Association must overcome every opposition, and eventually become one of the most flourishing institutions in the country.

Dr. King proposed "Success to the Journal". He also said, that it being the clearly expressed opinion of a great majority of members some few years ago, when the question was submitted to them, that it was for the interests of the Association to maintain a weekly journal; and, as there was every reason to suppose that opinion was still unchanged, we were bound to abide by the wish of the majority, and do all that we could to render the Journal worthy of the great body from which it emanated. He alluded to the fact of having voted with the minority on the occasion referred to; but now thought it his duty to sink his own opinion, in deference to the strongly expressed wish of the majority.

Dr. Munroe, as one who had joined the Association entirely on the merits of its Journal, responded; and spoke in high terms of the character of its contents, as recording the practice, views, and experience of a large class of provincial practitioners, which communications may stand honourable com-

parison with those of their more fortunate medical brethren in the metropolis. He believed it was a popular error to suppose that all the learning and wisdom were concentrated in London; and that the valuable communications to the Journal made by men in the provinces, eminent for their researches in science and practical acquaintance with their profession, would always cause it to take a high position in the medical literature of the day. What the Journal wanted was a hearty and strenuous support from its own members; and the success of the Association mainly depended upon the efficiency of its weekly Journal.

ROCHESTER, MAIDSTONE, GRAVESEND, AND DARTFORD DISTRICT MEETINGS, IN CONNEXION WITH THE SOUTH-EASTERN BRANCH.

The first of the series of meetings for the present session was held at the Bull Inn, Dartford, on Friday, September 28th, at 3.45 P.M; Frederick Fry, Esq., President of the Branch, in the Chair. There were also present: John Armstrong, M.D. (Gravesend); Charles L. Allwork, Esq. (Maidstone); Frederick J. Brown, M.D. (Rochester); John M. Burton, Esq. (Blackheath); J. Evelyn Crook, M.D. (Northfleet); Daniel Culhane, Esq. (Dartford); James Dulvey, M.D. (Brompton, Chatham); Samuel Gould, M.D. (Northfleet); John Grantham, Esq. (Crayford); Thomas Hunt, Esq. (London); Adam Martin, M.D. (Rochester); E. Moore, Esq. (Dartford); S. Norton, M.D. (Wateringbury); Flaxman Spurrell, M.D. (Bexley Heath); and as visitors: George Bottomley, Esq. (Croydon); and W. C. Lake, M.D. (Sidcup).

The President opened the session with an appropriate address, which was very warmly received.

Business. The minutes of the last meeting were read and confirmed; after which, the Treasurer (Dr. Martin) submitted his statement of accounts. This was duly audited and approved.

It was then resolved unanimously, on the motion of Dr. Martin, seconded by Mr. Culhane—

"That Dr. Dulvey be requested to retain for another year the office of Honorary Secretary to these district meetings; and that sincere thanks be given to him for his past and efficient services."

Papers and Communications. The following communications were read and discussed:—

1. On Fever. By John Grantham, Esq., F.R.C.S., Crayford.
2. A Case of Neuralgic Affection of the Cœliac Plexus. By Adam Martin, M.D., Rochester.
3. A valuable Microscope (with preparations) was exhibited by Dr. Spurrell; as were also some improved Splints, and other Fracture Apparatus, by Mr. Grantham.

The time for discussion having expired, the warmest thanks of the meeting were given to Mr. Grantham and Dr. Martin for their interesting papers, and they were requested to permit them to be published in the Journal of the Association. Thanks were also voted to the President, after which the gentlemen present adjourned to dinner.

Reports of Societies.

NATIONAL ASSOCIATION FOR THE PROMOTION OF SOCIAL SCIENCE.

Department of Public Health.

POVERTY IN RELATION TO DISEASE. BY J. A. EASTON, M.D.

Dr. Easton commenced his paper by submitting as a postulate, that whatever depresses the vital force is either a direct cause of disease, or renders the body more susceptible of it and less able to withstand its attacks. As poverty depressed more or less the vital energies, he had, in discussing its relations to disease, to deal with an acknowledged truism. Poverty was defined as being characterised by indigence, privation, and want of proper means of subsistence; to which were added—but not invariably—sooner or later, deficient clothing, insalubrious lodgings, and a noxious atmosphere; these being too frequently succeeded by perversion of the moral sense. All these items have been repeatedly examined; and the object of the author was to point out only a few of the relations between poverty and disease.

The first point touched on was the deficiency of food. Dr. Easton adverted to the necessity which exists not only for a proper quantity of food, but for a due admixture of nitrogenous and non-nitrogenous constituents. The quantity of the latter may admit of much variation; but less than four-and-a-half ounces of nitrogenous material a day is insufficient for health; and, when the supply is only occasional and defective, the system readily falls a prey to disease, as was illustrated in the case of the famine fever in Ireland. Dr. Easton wished, however, to dwell particularly on the production of disease of a special nature, in consequence of scarcity of one or other of the essentials of health-sustaining food. In 1847, he had witnessed many cases of scurvy; and again, but in a less degree, in 1858. In all, the disease was clearly traceable to error not in quantity but in kind of food; in some, to scarcity of animal food; in others, and more frequently, to the long continued want of vegetables. The patients were mostly railway-labourers; and Dr. Easton submitted that it should be a duty of the legislature, in giving power to commence any great public undertaking, to render it imperative, by special clauses, to provide for the workmen a well selected dietary, and in particular a sufficient supply of fresh succulent vegetables, and especially of potatoes.

Dr. Easton next noticed the influence of habitual personal uncleanliness in the production of disease; and gave a brief outline of the function of the skin as an excretory organ. Alluding then to the physiological law, that when one excreting organ is interfered with in its functions, a compensatory increase of function takes place in other organs, the author called attention to the experiments made in the Glasgow Infirmary, on cases of small-pox, measles, and scarlet fever, by the late Dr. Macgregor, which showed that when the skin was disabled by disease from excreting its proper share of carbonic acid, the lungs exhaled more than double their normal quantity. This compensatory action, being unnatural, must destroy the equilibrium of the system; and hence the inference can scarcely be resisted that disease of internal organs must be a necessary consequence of long accumulated squalor. For instance, it is believed by some that disease of the kidneys is often produced by this cause.

Passing by the physical evils arising from insufficient light, and other topics, Dr. Easton commented on the bearings of poverty on disease as exemplified in overcrowding. In proof of the prevalence of disease in crowded dwellings, the author submitted the following facts. The area of the city parish of Glasgow embraces about three square miles. During the twelve months ending on 9th August, 1860, there were 7500 applications for medical relief among the poor residing within these bounds; and of these 1592, or more than one-fifth, came from a district covering about only one-sixtieth part of the entire area. In this unhealthy part, it had been ascertained by measurement that the allowance of air to each individual was in some cases only 90·5 cubic feet. The localities alluded to are thus the hotbeds from which, in epidemic visitations, typhus fever may spread—as it has spread before—over Glasgow. He protested against the assertion that Glasgow is preeminently insalubrious, seeing that small, circumscribed, and exceptional portions only deserve that unenviable distinction.

In conclusion, Dr. Easton enumerated a few of the remedies which have been or might be applied. Municipal authorities should exercise a vigilant supervision over all lodging-houses in the denser portions of large towns, and should insist that the space essential to health and strength should invariably be provided. The police in Glasgow were already beginning to root out the evil. An Act should be obtained, applicable to the United Kingdom, for regulating buildings, and for breaking up dense localities. During the last thirteen years, the corporation of Glasgow has been acquiring, destroying, and rebuilding on, old and unsuitable property in some of the worst parts of the city—perhaps slowly, but perhaps as well as the want of compulsory power and a limited rate will allow.

INFANTILE DEATH-RATES IN THEIR BEARINGS ON SANITARY AND SOCIAL SCIENCE. BY W. T. GAIRDNER, M.D.

After some preliminary remarks on the great value justly attached to the death-rates of young children, as indicating the favourable or unfavourable sanitary position of a community. Dr. Gairdner said that the importance of these infantile death-rates depended on two considerations—first, that infants were much more easily affected than the general community by most of those causes of disease and death which were common to all; and secondly, that their dependence upon their parents for bodily organisation, as well as for proper nourish-

ment and support subsequent to birth, made the sanitary state of very young children a most delicate test of the real health and well-being of the parents—*i. e.*, of their social and moral condition at the productive period of life, and in so far as concerns the domestic relation. After stating that he had chosen to confine himself to the period under one year in preference to the more usual one of under five years, as representing the death-rate of the earliest period of life, and as representing in the most distinct form the hazards to which infant lives were exposed, he proceeded to ask whether we could arrive at any secure conclusions as to the relation which the infantile bears to the general death-rate. In order to solve this problem he had availed himself very fully of the laborious calculations appended by the Registrar-General of England to his Ninth Annual Report, in which were given a death-rate for each sex, and for every separate age of human life, in every division and county, and in 324 districts in England, calculated for the years 1838-44, and for the census of 1841. On considering broadly the death-rate of very young infants, as compared with that of the general population, it was found to be immensely different, insomuch that it was rather a moderate statement of the case to say that where 20 represents the general death-rate, 150 will be the death-rate of infants less than a-year old; or, in other words, that the infantile is 7½ times the general death-rate. This was undoubtedly the case so frequently that it might be said to be, in one sense of the word, a normal fact. But it was not always a normal fact for the infantile death-rate to be 7½ times the general death-rate. By a farther consideration of the returns of the Registrar-General it appears that as the death-rates themselves rise or fall, their proportion to one another commonly rises or falls also. Thus, when the general death-rate is so low as 16 in 1,000, it is probably nominal for the infantile death-rate not to exceed 6½ times the general death-rate; and when the general death-rate is so high as 22 in 1,000, it is probably so common as to be nominal—though of course not a desirable result—for the infantile death-rate to be 8½ times the general death-rate. This tells a tale of some importance as regards the tenure (so to speak) of infant life—the conditions on which the young infant lives, moves, and has his being; for the enlargement of the ratio between the infantile and general death-rate, according as the rates themselves increase, shows nothing less than this—that, generally speaking, the causes which produce a high rate of general mortality have a still greater tendency to produce a high rate of infant mortality, and operate upon the infant life to a far greater degree.

Dr. Gairdner then gave a few illustrations of the laws of infant mortality. First, as regarded the districts and counties having very low death-rates, both infantile and general, and consequently a low ratio of the one to the other. These privileged districts were found to be mostly rural, often to a great extent pastoral in character; the population commonly sparse, the towns few and small, the face of the country uneven or perhaps mountainous; in many such districts there were valuable minerals and a considerable amount of mining industry; agriculture pursued in some of them to a very considerable extent; in others hardly any predominating industry, but a small population supported in a variety of ways upon a soil which did not repay large advances of capital. He had, however, been greatly startled to find, in most of the great corn-growing counties of England, that not only was the infantile death-rate much higher than it ought to be, considering the amount of the general death-rate; and higher, also than it ought to be, considering the eminently rural character of the population, the small size of the towns and the small number of persons to each acre of surface. It had been found that in no less than eleven of the fourteen counties of England most devoted to agriculture the ratio of the infantile to the general death-rate was higher than that indicated as the mean rate for their general death-rate; and further, that the ratio was enormously high. He had come to the conclusion that in almost all of the eminently agricultural counties the destruction of infant life was in excess of what might be expected under the circumstances; and he could arrive at no other conclusion than this—that the habits of the great agricultural populations of England, probably of slow formation, and transmitted down from generation to generation in some way or other, were apt to give rise to neglect of the family relation or of maternal duty, and that the employment of women in some counties in special industries was one consequence of this habitual neglect, while the imperfect rearing of children was another, and a still more widely spread consequence of it.

Dr. Gairdner then referred to the infantile death-rates of London, remarking that the West-end districts of London had a death-rate much below the average of town districts, and that even taking into account the "slums" of Westminster and the infirm population of St. Martin-in-the-Fields, the mean death-rate of all the districts, which were the great seats of business and fashionable life, were decidedly below London as a whole, and still more below the average of other great cities. He then directed special attention to the fact that the infant mortality in London bore no appreciable proportion to the general death-rate. A careful consideration of the Registrar-General's returns had led him to the conclusion that all the West end districts of London are fatal to children in a proportion which was really enormous, when the favourable state of the general death-rate was considered. For example, St. George's, Hanover-square, with very nearly the lowest general death-rate in London, was, with all its wealth and splendour, only a little less fatal to infants than Shoreditch, Bermondsey, and Lambeth. It was more fatal than the Strand district or Stepney, far more fatal than Greenwich, and in a still more striking proportion, more fatal than Wandsworth, Camberwell, and the outlying districts in general. Even the sailors around the docks, and the tradesmen and artisans of the Strand and City districts, might boast that their contribution to the infantile mortality was small compared with that of the rich, prosperous, and polished West-end.

Dr. Gairdner, in conclusion, alluded to his conclusions which he had drawn as to the influence of large agricultural populations on the infantile death-rate, and the influence of the West-end of London, and confessed that these startled him with something like a sense of novelty. If they were facts, and not mere play of the fancy, he ventured to call them stupendous facts, deserving the immediate attention of the association, and calling for remedy with a voice far more eloquent than any words in which they could possibly be uttered. He shrank from the idea, with the imperfect data before him, of attempting to expatiate upon this subject, or to explore the whole depths of these tremendous evils. Possibly the subject might be again resumed with larger knowledge. In the meantime it would be sufficient for his purpose if the attention of the association should have been fully awakened to some of the evils which afflict the most helpless age of humanity, and tend to poison the springs of health for the entire English race.

INFLUENCE OF TOBACCO-SMOKING ON PUBLIC HEALTH.
BY SIR CHARLES HASTINGS, M.D., D.C.L.

Sir Charles Hastings commenced by observing, that it might to be considered one of the functions of the Association to point out the evil effect on public health of certain active agents in daily use by the community. The one to which he would especially draw attention was tobacco. Tobacco is at present extensively consumed by all classes: it is a very active narcotic agent; its empyreumatic oil acts most deleteriously on the nervous system; and when it is concentrated, death results from it. The author then quoted the account of the chemical nature of tobacco, as given by Professor Johnstone of Durham, "that the chemical constituents of tobacco are three in number: a volatile oil, a volatile alkali, and an empyreumatic oil. The volatile oil has the odour of tobacco, and possesses a bitter taste. On the mouth and throat it produces a sensation similar to that caused by tobacco smoke. When applied to the nose it occasions sneezing, and when taken internally it gives rise to giddiness, nausea, and an inclination to vomit. The volatile alkali has the odour of tobacco, an acrid, burning, long-continuing, tobacco taste, and possesses narcotic and very poisonous qualities. In this latter respect it is scarcely inferior to prussic acid, a single drop being sufficient to kill a dog. Its vapour is so irritating, that it is difficult to breathe in a room in which a single drop has been evaporated. A hundred pounds of the dry tobacco-leaf yield about seven pounds of nicotin. In smoking a hundred grains of tobacco, therefore, say a quarter of an ounce, there may be drawn into the mouth two grains or more of one of the most subtle of all known poisons. The empyreumatic oil is acrid and disagreeable to the taste, narcotic and poisonous. One drop applied to the tongue of a cat brought on convulsions, and in two minutes occasioned death. The Hottentots are said to kill snakes by putting a drop of it on their tongues. Under its influence, the reptiles die as instantaneously as if killed by an electric shock. It appears to act nearly in the same way as prussic acid. Experience proves that a large proportion of those who smoke or chew tobacco, do so under the conviction that it is always innocuous in its effects, and often beneficial. Now, this is a mistake which the every-day observation of medical practitioners can attest. For amongst the patients who consult us for various nervous and

stomach complaints, it will be found that tobacco smokers form a large proportion. Indeed, we find, unexpectedly sometimes, on inquiry, that the habit of smoking is the source of very distressing ailments, which immediately or gradually subside on omitting the use of this drug. It is grievous to observe that this habit is prevailing among young people, upon whom its effects are most likely to be prejudicial. Strikingly illustrative of this position is the fact, which has been very recently made public, that in the competitive examinations to which young persons are submitted in the military schools in France, the smokers of tobacco occupy the lowest place."

One of the most severe cases of epilepsy which Sir Charles had ever seen was in a boy of twelve years of age, who had been for two years a tobacco-smoker; he recovered only on being prevented from continuing the habit. It could, no doubt, be said, and it was true, that thousands pursue this practice without producing epilepsy; but many of these suffer from nervous and digestive disorders.

It was, then, important that the Association should disseminate sound views on the action of tobacco, and should show that this drug cannot be used indiscriminately. An admonition from such a body would come with more force than from the medical profession, whose monitions could only find way among the sick and those needing medical care, while the opinion of the Association would permeate the community at large. Sir Charles Hastings then quoted from the opinion of Sir B. Brodie on the effects of tobacco on the nervous system.

The various institutions now formed and supported for the purpose of diffusing useful knowledge among the labouring classes, ought to be available to assist in this work, if their managers could be made awake to the importance of the question; but, in many instances, these societies are not aware of the baneful action of tobacco on the frame. If they were, smoking-rooms would not form a part of the establishment, whereby the onward progress of civilisation is proposed to be insured. It is a sad reflection that it should be considered necessary to insure the attendance of members at a society whose professed object is to advocate civilisation by diffusing art and science, that there should be the means supplied for indulging in the evil habit of smoking, as in the clubs of the aristocracy. This Association may at any rate raise a warning voice against such erroneous proceedings, which must doubtless tend to enervate our population, and eventually to produce a degenerate race.

Sir Charles Hastings ended his paper with the following conclusions:—

That the effects of tobacco-smoking are chiefly dependent upon an empyreumatic volatile oil, and other active principles, whose direct tendency is to act injuriously on the nervous system and digestive organs. That tobacco is extensively consumed by the community, and its use ought to be discouraged. That this Association emphatically records its conviction that societies formed for the purpose of promoting useful knowledge amongst the working-classes, should on no account provide smoking-rooms for the members.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

Of sons, the wives of—

Mockler, Edward, Esq., Staff Surgeon-Major, at Cheltenham, on September 28.

*Smith, Frederick M., M.D., Hadham, Herts, on Sept. 28.

Of a daughter, the wife of—

*Kingsley, Henry, M.D., Stratford-on-Avon, on Sept. 27.

MARRIAGES.

Bostock, Samuel, Esq., the Hermitage, Walton Heath, Surrey, to Marian, only daughter of W. T. Iliff, M.D., of Newington, on October 2.

Gains, George E., Esq., Staff-Surgeon, to Jane, eldest daughter of T. H. Roberts, Esq., of Gibraltar, at St. Mary's, Islington, on October 2.

Gayleard, John, Esq., Surgeon, Devonshire Street, W., to Louisa, daughter of the late Peter Allen, Esq., of East Retford, at Trinity Church, Haverstock Hill, on September 20.

Jameson, Thomas, Esq., Egremont, Dublin, to Jane Sarah, youngest surviving daughter of the late Robert Brian, M.D., R.N., of Canonbury, at Islington, lately.

Jeaffreson, John C., Esq., barrister-at-law, Lincoln's Inn, to Arabella E., only surviving daughter of the late William Eccles, Esq., Surgeon, at St. Sepulchre's, on October 2.

Kerr, Russell James, Esq., eldest surviving son of W. C. Kerr, M.D., of the Haie, Newnham, Gloucestershire, to Rosa M. A., eldest daughter of the late G. B. Griffiths, Esq., of Castle Hill, Englefield, Surrey, on September 4.

Saulez, the Rev. Vincent, of St. Paul, Penzance, to Alice Mary, second daughter of the late Joseph Bayley, Esq., Surgeon, Odiham, on September 27.

Smith, William J., Esq., Surgeon, Chipping Norton, to Miss Theresa Haigh, of Newby, near Leeds, on September 26.

Thoinnet de la Turmélière, M., Imperial Chamberlain, to Mademoiselle Velpeau, daughter of the celebrated French surgeon, in the chapel of the archiepiscopal palace at Paris, on September 26.

Webb, John C., M.D., Grosvenor Street West, to Alicia J., youngest daughter of the late Colonel Alexander Robertson, of Halleraig, Lanarkshire, on September 19.

DEATHS.

Crellin, Frederick, Esq., Surgeon R.N., at Forest Hill, Sydenham, aged 59, on October 1.

Holt, William H., M.D., at Enfield, aged 77, on Sept. 29.

Howell, James, Esq., Surgeon, at Wandsworth, aged 69, on September 26.

Laing. On July 4, at Warnambad, Victoria, Agnes I. M., eldest daughter of the late D. Laing, Esq., Surgeon, Thurso.

Macaulay, Robert W., Esq., Surgeon, Bengal Medical Service, on board the *Mauritius*, at Odin Bay, China, on July 15.

Toldervy, James B., M.D., of Fredericton, New Brunswick, aged 52, on September 4.

PASS LISTS.

Royal College of Physicians of London. At the ordinary quarterly Comitia, held on Tuesday, October 2nd, the following gentleman, having undergone the necessary examination, was admitted a member of the College:—

Price, James, M.D., Brixton

The following gentleman was also admitted a member of the College, having been previously elected under the temporary bye-laws now expired:—

Bryan, Edward Langdon, M.D., Brighton

University of St. Andrew's. List of gentlemen on whom the Degree of Doctor of Medicine was conferred, on September 28th, 1860:—

Adam, James Veitch, L.R.C.S.Ed., Wooler
Baxter, John, L.R.C.S.Ed., New Brunswick
Bird, S. Dougan, M.R.C.S. and L.A.C., Richmond, Surrey
Bennett, Charles Henry, L.A.C., Hammersmith
Blades, Charles Corbett, M.R.C.S. and L.A.C., London
Bowness, Robert H., L.R.C.P.Ed. by exam., Lancashire
Braithwaite, William, M.R.C.S. and L.A.C., Leeds
Clarke, Alfred Frederick S., L.A.C., Manchester
Dawson, James Edmund, M.R.C.S. and L.A.C., Liverpool
Downs, George, F.R.C.S., Stockport
Dudley, William Louis, M.R.C.S. and L.A.C., Dudley
Edger, W., M.R.C.S. and L.A.C., Nether-Stowey, Somerset
Galgey, William, Belfast
Goldie, William, L.R.C.S.Ed., Lanarkshire
Harvey, Octavius Charles, M.R.C.S., Jamaica
Haydon, Nathaniel Jno., M.R.C.S. and L.A.C., L.R.C.P.Ed. by exam., Bovey-Tracey, Devon
Hoskins, Edmund John, M.R.C.S. and L.A.C., H.M. Indian Service
Jackson, John Hughlings, M.R.C.S., Green-Hamerton
Major, Harry Pike, M.R.C.S. and L.A.C., Hungerford
May, Edward Hooper, F.R.C.S. and L.A.C., Tottenham
Metcalfe, Richard, M.R.C.S., Hawes, Wensleydale, Yorks.
Part, James, F.R.C.S. and L.A.C., London
Pearl, Geoffrey, M.R.C.S. and L.A.C., Windsor
Peart, Robert S., M.R.C.S. and L.A.C., Tynemouth
Pike, Thelwell, M.R.C.S. and L.A.C., Weyhill, Hants
Pulney Andy, Senjee, Madras
Ross, George, M.R.C.S. and L.A.C., L.R.C.P.Ed., London

Royston, Chas., M.R.C.S., L.A.C. and L.R.C.P.Ed., London
Shaw, Edmund, M.R.C.S. and L.A.C., Trinidad
Stanfield, William, M.R.C.S. and L.R.C.P.Ed., Oldham
Stevenson, Henry C., L.R.C.S.Ed., N. Brunswick, B.N.A.
Thompson, Daniel Robert, Madras
Tylecote, John H., L.R.C.S.Ed. and L.A.C., Heywood
Watts, Robert George, M.R.C.S. and L.A.C., Clifton
Williams, John, M.R.C.S. and L.A.C., Doncaster
Williams, John, M.R.C.S., Brecon

The Degree of Bachelor of Medicine was also conferred on—
Robinson, John, B.A. St. Andrew's, Runcorn, Cheshire

Apothecaries' Hall. Licentiates admitted on *Thursday, September 27th*, 1860:—

Barker, George, Totteridge
Callon, William Joseph, Liverpool
Davy, Richard, Chulmleigh
Ryall, Wm. F., Plymouth
Williamson, Henry W.

The following gentlemen also, on the same day, passed their first examination:—

Garner, Robert C., Stoke, Staffordshire
Laverick, John V., Winderwell

As an assistant—
Downes, Robert, London

Retirement of M. Ricord. In accordance with the legal regulations of the Parisian hospitals, M. Ricord would have had, on the 1st of January of the coming year, to retire from the post of surgeon to the Hôpital du Midi, which he has for thirty years most worthily occupied. He has, however, taken the resolution of retiring at once; and, on Thursday week last, his farewell lecture was delivered to a numerous audience of members of the profession and of students. In his address, which lasted two hours, he gave a *resumé* of his labours.

Medical Missions to Central Africa. In a letter from Archdeacon Mackenzie, the head of the Mission to Central Africa, occurs the following: "My chief anxiety at present is to find a really earnest as well as competent medical man, willing to go with us as a missionary, devoting himself and his talents and skill to God's glory and the good of his fellows." A Cambridge paper, alluding to this paragraph, thinks it a splendid opportunity for any gentleman who possesses competent medical and surgical skill, a hardy constitution, a love of enterprise and adventure, and a fondness for natural history; such a man might easily make a splendid reputation.

Diseases at the Diggings. From the Australian papers it appears that the European population at the diggings are said to be in a state of excitement owing to the great influx of Chinese, amongst whom leprosy has broken out. The colonial government has appointed three medical gentlemen to examine into and report on the sanitary condition of the Chinese in the Braidwood district. Influenza has been general throughout the month of June, and prevailed with unabated virulence, especially in the country districts. In the week ending Saturday, July 21st, more deaths occurred in the vicinity of Armidale, New South Wales, than ever occurred before in a similar period.

Royal College of Surgeons. The Library and Museum of this institution were reopened on Monday last.

HEALTH OF LONDON—SEPTEMBER 29TH, 1860.
[*From the Registrar-General's Report.*]

		Births.	Deaths.
During week	Boys.. 909 / Girls.. 893	1802	1056
Average of corresponding weeks 1850-9		1627	1227

Among the causes of death were—bronchitis, 59; pneumonia, 68; phthisis, 139; small-pox, 3; scarlatina, 46; measles, 43; diphtheria, 11; hooping-cough, 41. The deaths from pulmonary diseases (exclusive of phthisis) were 144, being 21 above the corrected average.

Barometer:
Highest (Sat.) 29·755; lowest (Mon.) 29·529; mean 29·624.
Thermometer:
In sun—highest (Th.) 106·2 degs.; lowest (Fri. & Sat.) 59·0 degs.
In shade—highest (Th.) 65·7 degs.; lowest (Wed.) 37·5 degs.
Mean—59·1 degrees; difference from mean of 43 yrs.—1·5 degrees.
Range—during week, 32·2 degrees; mean daily, 14·3 degrees.
Mean humidity of air (*saturation* = 100), 94.
Mean direction of wind, Var.—Rain in inches, 1·81.

TO CORRESPONDENTS.

Communications have been received from:—Dr. Lionel Beale; Dr. T. H. Barker; Mr. E. Daniell; Dr. W. R. Hill; Dr. Adam Martin; Mr. Jno. Grantham; Dr. Jas. Dulvey; Mr. R. S. Fowler; Dr. Day; Hon. Secs. of the Harveian Society; Mr. Augustin Prichard; Mr. P. C. Price; Dr. Skinner; Dr. Copeman; Dr. Handfield Jones; Dr. Munroe; Mr. J. Gardner; Dr. A. Robertson; Mr. R. M. Craven; Dr. Kidd; Dr. J. W. Watkins; and Mr. David Hughes.

ADVERTISEMENTS.

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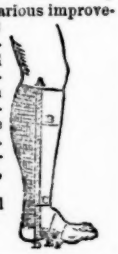

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